THE OIL WEEKLY

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The Oil Man's Calendar

APR.	
1–2	American Petroleum Institute Division of Production, Southwestern District, Dallas, Texas.
8–10	Petroleum Industry Electrical Association, Shreveport, Louisiana.
13	American Petroleum Institute, Division of Production, Pacific Coast District, Los Angeles.
15–16	National Petroleum Association, Cleveland, Ohio.
26–28	Western Petroleum Refiners Association, Hot Springs, Arkansas.
MAY	
6–7	American Petroleum Institute, Division of Production, Eastern District, Columbus, Ohio.
10–16	American Gas Association, Natural Gas Department, Kansas City, Missouri.
19–21	Natural Gasoline Association of America, Tulsa.
23–27	National Association of Purchasing Agents, (Oil Company Buyers Group), Pittsburgh, Pa.
JUNE	
1–3	American Petroleum Institute, Mid-Year Meeting, Colorado Springs, Colorado.
10–12	Pennsylvania Grade Crude Oil, Association, Sailing from Buffalo, New York.
11	Interstate Oil Compact Commission, Santa Fe, New Mexico.
14–19	Second World Congress of Petroleum, Paris, France.
25–27	National Oil Scouts Association, Dallas, Texas.
OCT.	
11–16	Oil World Exposition, Houston, Texas
29–30	Mid-Continent Oil and Gas Association, Texas Division, Dallas, Texas.
NOV.	
9–12	American Petroleum Institute (Annual) Chicago.

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LOOKING AHEAD

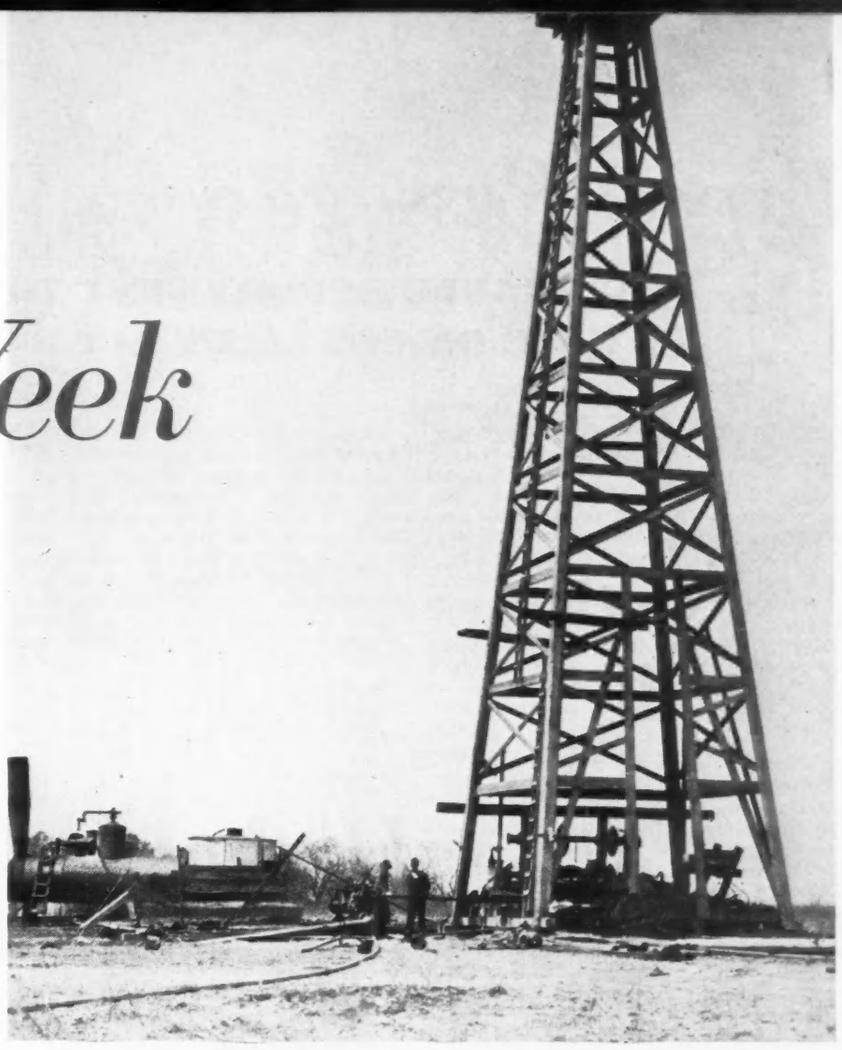
WITH THE EDITOR

Metallurgy and Oil . . . Southwest District A. P. I. Meeting.

WITH the widespread advent of alloy usage into the petroleum industry, metallurgy has become an important subject. It is a phase petroleum engineers should know more about, as it would prove a big assistance in selection of proper materials for unusual operating conditions. It was only a few years ago that the oil industry first learned of metals and alloys, and much remains to be learned. As far as the oil operator and engineer are concerned, however, they must first gain the necessary basic data. For this reason, The OIL WEEKLY next week will present an issue stressing the use of metals and alloys in the oil field. Articles on grain structures, welding, heat treating, use in drilling and producing equipment will appear. Those interested in keeping abreast of this new and important subject will do well to consume its contents. Those who have not yet devoted any study to the subject will find the articles so worded as to be understandable, and therefore very helpful and enlightening.

WE'RE going to be present at the Southwestern District meeting of the American Petroleum Institute Division of Production, April 1 and 2, in Dallas, and hope to see many of our friends. In case you can't possibly be there, however, THE OIL WEEKLY, as usual, will be the first oil journal to publish a complete story on the meeting. Sessions close Friday night, and unless you live a long way off, we'll bring the meeting to you the following Monday. A very interesting program, combining economic phases with engineering progress, has been arranged.

This Week



Important Discovery

THE drilling boom along the Balcones Fault zone between 1923 and 1930 is being recalled by the discovery of Edwards lime production in the Branyon field, Caldwell County, Southwest Texas. It is looked upon with great importance due to large recoveries provided by previous Edwards lime producing areas along the fault. The well, Lincoln Petroleum Corporation's Branyon 5-B (right), cleared the derrick with oil when the swab was run the first time. It is being completed as a pumping well, estimated at several hundred barrels daily. **Page 75.**

A FAVORABLE report on the bill to make permanent the Connally Contraband Oil Act was sent to the Senate last week. This paves the way for action to prevent lapsing of the law at midnight June 15. The unanimous approval of the committee is thought to reflect the attitude of the Senate on the measure. **Page 10.**

AN increase of 84,000 barrels daily in United States crude production during April has been recommended by the Bureau of Mines. This would place daily average production at 3,243,000 barrels, which is 227,000 barrels above the actual recovery in April, 1936. **Page 11.**

THE Texas Railroad Commission has recognized the danger in recent increases in crude stocks resulting from higher allowables prescribed during the past three months. In setting the state's allowable for April, this body reduced the quota 82,005 barrels from the allowed output on March 18. The new Texas allowable is 1,348,964 barrels daily. However, the figure is still 49,064 barrels higher than the production allowable recommended by the U. S. Bureau of Mines. **Page 12.**

HIGHER crude prices are justified and more than a possibility within 60 days declared Charles F. Roeser, president of the Independent Petroleum Association of America, at a district meeting last week in Houston. Roeser emphasized the failure of oil prices to keep pace with increases in other commodity prices. However, he did stress the necessity of keeping a balance between supply and demand in other commodity prices. **Page 10.**

CURRENT SITUATION

Outlook.—Favorable; better crude control promised for April.

Crude Market.—Generally firm.

Refined Oil Markets.—Gasoline prices improve further.

Crude Production.—Up 8450 barrels to another new peak.

Crude Runs to Stills.—Up 110,000 barrels to 3,095,000 daily in week ended March 20.

Crude Stocks.—Up 1,002,000 barrels in week ended March 13; gain of 5,402,000 in 7 weeks.

Gasoline Stocks. — Up 387,000 barrels in week ended March 20, to 81,623,000; new peak.

Gas and Fuel Oil Stocks.—Down 1,677,000 barrels in week ended March 20, to 97,287,000 barrels.

Drilling.—Completions down 16 last week; total 464 wells.

See* MARKET SECTION *for Details

RECORD operating pressures are being successfully handled in the Old Ocean field on the Texas Coast. Through a unique flow arrangement that includes doubling choking and heaters to freezing, it has been proved possible to use only one stage of separation although the crude is nearly distillate and reaches the surface at 3900 pounds flowing pressure. **Page 20.**

IN discussing the future of petroleum exploration, E. DeGolyer has urged the establishment of this work as an independent department. He declares some of the advantages such organization procedure would be: more effective results because of definite responsibility; development of cost accounting for oil finding; improvements in equipment and technique. **Page 16.**

OPINION differs on the geology of the deep-seated Anahuac salt dome field in Chambers County, Texas. It has numerous faults within its producing limits. A discussion of its geological conditions and a number of cross sectional views are presented in this issue. **Page 30.**

Expect Passage

FAVORABLE REPORT SENT TO SENATE ON CONNALLY ACT

Washington.—A favorable report on the bill to make permanent the Connally Contraband Oil Act was submitted to the Senate March 25 by the finance committee, paving the way for action to prevent the lapsing of the law at midnight, June 15, next, as now provided for.

The bill was unanimously approved by the committee following a short discussion of the merits of the issue. The action of the committee is seen as reflecting the attitude of the Senate as a whole when the measure comes up for a vote.

Proven Efficacy

"Because of the proven efficacy of the Connally act, the activity of all but one of the large oil-producing states to improve their oil conservation laws, the larger ultimate yields of an irreplaceable natural resource by preventing waste, and the continued need of support of the states in the enforcement of their laws by the federal government, your committee believes it highly desirable that the bill be speedily enacted by Congress without change or modification," the Senate was told in the committee report.

"Five states—Kansas, Louisiana, New Mexico, Oklahoma and Texas—producing 73 percent of the national oil output, have adopted the policy of regulating oil production so as to prevent waste," it was pointed out. "Each of these states determines the amount of oil which currently may be produced without waste, and the federal government, under the act of February 22, 1935, simply supports the state policy by providing that petroleum, or the products thereof, produced in excess of the amounts permitted by state law, is contraband and may not be moved in interstate or foreign commerce. In the existing law, the Congress has clearly stated its legislative policy, has established necessary standards, and laid down rules. The act has been supported with uniform success in the federal courts and no issue thereunder has been presented to the Supreme Court."

The prosecution of cases brought under the law rests with the Department of Justice, it was stated, and out of 248 civil and criminal suits, the government has been successful in 231 and unsuccessful in 2, and has 15 pending.

During the fiscal year ended June 30, last, the Interior Department, under the act, issued about 6000 certificates of clearance involving 222,000,000 barrels of oil and products at a cost of about one-tenth of a cent a barrel, the committee reported.

"If the act is terminated on June 16, 1937," it was asserted, "contraband oil will frustrate the states in their conservational activities with resultant waste of an irreplaceable natural resource essential to the prosperity of our citizens and absolutely indispensable to our national defense. An example of the effectiveness of the act from the standpoint of conservation by the prevention of waste is established by testimony that through the cooperative efforts of state and federal governments the ultimate recovery of oil in one field (East Texas) has been increased by more than 600,000,000 barrels, an amount which could be equaled only by the discovery of 60 average-sized oil fields.

The committee report reviewed the hearings held during February, pointing out that the preponderance of the testimony was in favor of the continuance of the act, and referred to the support given it by the Attorney General and Railroad Commission of Texas, the Governor and the Corporation Commission of Oklahoma and the Chairman of the Kansas Corporation Commission.

Ickes Letter Quoted

A letter from Secretary of the Interior Harold L. Ickes, supporting the measure, also was quoted in the report.

"By eliminating contraband oil products from interstate commerce," the secretary said, "the law has been one of the principal factors which have made it possible for nearly all independent and non-integrated petroleum refiners to operate without incurring the substantial losses which threatened their existence immediately prior to the enactment of that legislation.

"The law also has removed one of

Higher Oil Prices

JUSTIFIED WITHIN 50 DAYS DECLARES CHARLES ROESER

Houston.—Higher crude oil prices within 60 days are justified and are more than a possibility, Charles F. Roeser, president of the International Petroleum Association of America, stated March 24 at a district meeting of the organization. Roeser added that an increase of 15 percent did not appear out of line, and emphasized the failure of oil prices to keep pace with the increase in other commodity prices. He said that present developments point to a substantial increase some time in May.

Must Balance Supply-Demand

Roeser, in a pointed address before the meeting, stressed the importance of keeping a balance between supply and demand of both crude oil and gasoline. He said that his association met in Tulsa two weeks ago to consider corrective measures, and has recommended a production in line with current requirements. The increase in crude oil and gasoline stocks, if continued, carries a threat to market stabilization, he said. A correction of present production troubles would carry the industry into a very strong position by June, Roeser stressed.

The fallacy of overdrilling was emphasized. Such a program forces unnecessary offsetting by operators who don't want to drill more wells, and excessive drilling never leads to a corresponding increase in allowables, he said.

Roeser stated that the consumer should not be feared in the event of higher prices. He added that consumption probably will not be affected until consumer prices are 30 percent above the present price level. So long as petroleum product prices are in line with other commodity prices, consumption will not suffer, he contended, and the fairness of the public can be depended upon.

Harold B. Fell, executive vice president of the association, addressed the meeting and outlined the policies and aims of the organization. The annual meeting of the association will be held in Houston in connection with the Oil World Exposition, October 11 to 16, the last three days having been designated by officers.

Fell and Roeser told of the efforts of the association in Washington, and explained that a great part of the work has been directed toward making the influence and sincerity of the organization felt in the national capital. The excise taxes expire in June, but these taxes probably will be extended, Roeser stated.

George Hill Presides

George Hill, president of Houston Oil Company, presided at the meeting. Directors in the Houston area are: Marrs McLean, Beaumont; Mills Bennett, Houston; Winston P. Henry, Houston; George Hill, Houston; N. W. Hunter, Houston; George Sawtelle, Houston; E. A. Showers, Houston; George W. Strake, Houston.

About 60 independent oil men attended the meeting. Prominent visitors introduced were: Sumner Pike, Case Pomeroy Company, New York City; Langdon Williams, president of Freeport Sulphur Company; and E. A. De Golyer, Felmont Company.

the most persistent elements in the vicious 'price wars' which were prevalent prior to the enactment of the legislation and which threatened the existence in business of numerous independent retailers of petroleum products.

"The law has made this contribution to the conservation of the nation's oil and gas resources and to the economic stability of the petroleum industry without causing any material increase in the retail prices, ex taxes, of gasoline and other petroleum products."

As the bill was sent to the Senate for action, independent marketers indicated their intention of continuing their fight against continuance of the Connally Act.

Marketers Oppose

In a statement released through the National Oil Marketers Association, M. B. Whiting, president of Whiting Oil Company, Clifton Forge, Virginia, asserted that the only remedy for the present situation in the oil industry is the disintegration of all major companies and a requirement that the marketing division operate on its own initiative and profit or loss.

"The Connally bill is proposed and is urged to be passed under the guise of conservation," Whiting declared, "but in reality only concurs with the state compact law to add strength to the monopoly group in controlling absolutely production of crude oil and its prices, at the expense, and to the detriment, of the non-producing states, the independent market and the consuming public.

"The Connally Act aids the states and the producing companies to restrict production so as to skyrocket the price of crude, consequently the price of other petroleum products can be put sky high to the consuming public. It also permits those few companies in the monopoly group to control the marketing prices; namely, the spot tank-car price and the tank-wagon price of gasolines, at such level as does not permit a differential between them to allow marketing of this product at a profit.

"The enormous losses reported by the marketing subsidiaries of some of the major companies, and subsidizes by the parent companies, is clear evidence that this narrow margin of profit established between the tank-car price and the tank-wagon price on gasoline has for its purpose the annihilation of the independent jobber."

TEXAS OIL TAX
Hearing on 6-cent bill is set for March 30

Austin.—The Senate State Affairs Committee will hold a hearing March 30 on the Reed bill fixing a six-cent tax on crude oil produced in Texas.

Most observers believe that the Senate will reduce the rate to four cents per barrel if the oil companies present sufficiently strong arguments to support the reduction.

At this same hearing the committee will take up a resolution petitioning Congress to pass a law which would permit taxation of oil in storage at Texas ports. Because this oil has been ruled in interstate commerce, it is not subject to tax.

Bureau Ups Quota

RECOMMENDS APRIL OUTPUT INCREASE 84,000 BARRELS

Washington, D. C.—A jump of 84,000 barrels in daily average crude production in April as compared with the forecast for the current month was foreseen by the Bureau of Mines March 24.

Required daily average production for the coming month, it was declared in the bureau's monthly forecast, will be 3,243,000 barrels, which will be 227,000 barrels above the actual for April, 1936.

Coincidentally with the release of its forecast, the bureau announced that reports from the industry for the week ended March 13 indicate that output set a new record of about 3,380,000 barrels, an increase of 75,000 barrels over the previous week.

Stocks Increasing

"In the last four weeks for which complete data are available (February 6 to March 6)," it was commented, "the production of crude oil averaged 3,310,000 barrels, 131,000 barrels daily were added to domestic crude stocks, making an indicated market demand of 3,179,000 barrels. The bureau's estimate of this demand was 3,088,000 barrels. The explanation of the apparent 'deficiency' of about 90,000 barrels lies principally in the fact that gasoline stocks increased about 7,500,000 barrels in the period, whereas the bureau's estimate for this seasonal build-up, based on normal gains, was only about 5,200,000 barrels. In terms of crude-oil demand the difference of 2,300,000 barrels is equivalent to about 185,000 barrels daily and more than accounts for the deficiency."

Actual crude production this month, it was declared, is closely approximating the estimated daily average required for the year. The best present estimate of crude required in 1937 represents an increase of about eight percent over 1936 in the total demand for domestic crude and an increase of about 10 percent in required production, assuming no material changes in crude stocks during the year. "Unless total demand substantially exceeds present estimates," it was said, "the accumulation of about 6,000,000 barrels more gasoline stocks than was forecast for the first quarter of 1937, together with the recent substantial increase in crude stocks, indicates sharper reductions in gasoline stocks and smaller increases in required production for succeeding months."

Demand Still Climbing

Domestic demand for motor fuel in April is estimated by the bureau at 42,700,000 barrels, or 10 percent above the actual of April, 1936. Exports are placed at 2,500,000 barrels, 200,000 barrels over the March estimate but approximately equal to the April, 1936, actual shipments.

"Stocks of finished and unfinished gasoline amounted to 71,416,000 barrels on January 31, an increase of 8,341,000 barrels over stocks on January 1," it was pointed out. "According to the American Petroleum Institute, stocks were further increased during February by about 8,000,000 barrels, and still further increased in the first two weeks

Recommendatory Levels of Required Crude Oil Production by States*

(Daily averages in barrels)

STATE	Forecast April 1937	Forecast March 1937	Actual Production January 1937
Texas	1,297,900	1,256,600	1,268,000
Oklahoma	609,600	590,700	605,400
California	579,900	570,900	581,700
Louisiana	244,800	240,000	240,200
Kansas	183,000	178,000	171,000
New Mexico	91,400	88,200	89,500
Pennsylvania	49,800	49,000	48,100
Wyoming	44,000	42,200	46,400
Michigan	30,600	30,300	27,200
Arkansas	27,400	28,500	24,800
Kentucky	15,600	16,500	12,900
Montana	14,600	14,600	15,300
New York	14,000	13,500	14,200
Illinois	12,800	12,900	11,900
West Virginia	10,500	10,300	9,300
Ohio	10,200	10,300	8,200
Colorado	4,800	4,300	3,600
Indiana	2,100	2,200	1,900
	3,243,000	3,159,000	3,179,000

*The recommendations in this table have been calculated as the requirements for the months stated and are not intended to be calculations of daily average demand for the current year or for any period other than the months stated.

of March, indicating that stocks on March 31 may exceed 82,000,000 barrels. Such stocks appear high when compared with the totals of previous years. However, if the demand for gasoline in the coming season should exceed present estimates, this gasoline may be needed, particularly if the refineries cannot process more than 3,300,000 barrels daily, as is the opinion of some authorities."

Benzol and direct sales and losses of natural gasoline are estimated at 800,000 barrels, making the estimated production of gasoline 43,660,000 barrels, which the bureau recommends be distributed among the districts as follows: East Coast, 6,340,000; Appalachian, 1,620,000; Indiana-Illinois, 7,490,000; Oklahoma, 2,910,000; Kansas-Missouri, 2,750,000; Texas-Inland, 3,450,000; Texas Gulf, 9,490,000; Louisiana Gulf, 1,600,000; North Louisiana-Arkansas, 900,000; Rocky Mountain, 1,020,000; California, 6,090,000.

Natural-gasoline consumption at refineries in April is placed at 5.7 percent of the total gasoline required, or 2,490,000 barrels, and the yield of straight-run and cracked gasoline is estimated at 44.32 percent, an increase of 0.73 percent over the March estimate. The application of this yield to the estimated straight-run and cracked production of 41,170,000 barrels gives 92,890,000 barrels as the crude required at refineries.

Bureau estimates place runs of foreign crude at 2,800,000 barrels, exports at 4,100,000 barrels, and fuel and losses at 3,100,000 barrels, an increase in the latter to adjust it to an upward trend that has developed.

This will necessitate a daily average production of 3,243,000 barrels against 3,159,000 barrels forecast for March and an actual January average of 3,179,600 barrels, for distribution among the producing states as shown in accompanying table.

SAME ALLOWABLE

No change still leaves Oklahoma above bureau

Oklahoma City. — The Oklahoma Corporation Commission March 23 fixed the allowable crude oil production for April at 620,460 barrels. The figure, although the same as that suggested for March, shows an increase of 10,860 barrels over the recommendation of the United States Bureau of Mines, which was 609,600 barrels for April.

The commission showed a tendency to stay with the Bureau of Mines' recommendation, but nominations boosted the figure to 665,679 barrels, some 10,415 barrels above those for March. As a result the figure was held to the March total.

Oklahoma City field was held to 132,000 barrels daily. Percentage flow was raised to 18 and daily per well minimum increased to 300 barrels. Although several Class B pools were decreased, an increase in the class was noted because of the addition of Lucien pool. Total for the class was set at 131,606 barrels, as compared with 124,166 for March.

Cut Texas Output

APRIL ALLOWABLE REDUCED 82,005 BARRELS PER DAY

Austin.—The Railroad Commission has issued an order, effective April 1, fixing a total allowable for Texas of 1,348,964 barrels daily. The new order allows production of 82,005 barrels daily less than the total allowable in effect on March 18.

This cut coincides with the 80,000-barrel reduction which Railroad Commission Chairman C. V. Terrell predicted last week (THE OIL WEEKLY, March 22). It was effected by a flat cut of 15 percent of the proratable oil from all Texas fields with the exception of East Texas. The East Texas allowable is to continue at 2.32 percent of the hourly potential.

The new allowable is 287,055 barrels less than the demand for Texas oil, as indicated by nominations filed with the commission by purchasers of Texas crude. These nominations indicated that there was a firm demand for 1,636,019 barrels of oil daily.

The April allowable, however, will be 49,064 barrels more than consumer demand for Texas crude as calculated by the United States Bureau of Mines, which was estimated at 1,297,900 barrels daily.

In the accompanying table, district reductions as compared to March 18 and March 1 are indicated, together with the difference from March 18 to April 1. The only district allowable which was increased is that for East Texas where the completion of each new well results in an increase in total allowable.

Still Over Bureau Figure

The Yates field in Pecos County received the largest reduction, being cut 4387 barrels. This reduced its allowable from 35,000 barrels on March 1 to 30,613 barrels on April 1. The second largest cut was received by Conroe, Montgomery County. This field was given an allowable of 43,816 barrels as of April 1, which is 3334 barrels lower than its quota on March 1. The Loma Novia field of Southwest Texas was given the third greatest reduction, being cut 2938 barrels from its allowable of 19,583 barrels on March 1. This gave it an allowable of 16,645 barrels on April 1. One other field was cut back more than 2000 barrels. This was the Van field in Van Zandt County, East Texas, which now has an allowable of 32,681 barrels, or 2840 barrels lower than its allowed output of 36,521 barrels on March 1.

Many Large Cuts

Several fields were cut more than 1000 barrels. Among these were the following (all comparisons between allowables on March 1 and April 1): Seven Sisters, 11,130 to 9334, cut of 1796 barrels; Barbers Hill, cut 1481, from 13,600 to 12,119 barrels; Thompson, 14,610 to 13,172, reduction of 1438 barrels; Greta, cut 1288 barrels to 12,656 from 13,944 barrels; Lopez, cut 1155 from 9030 to 7875 barrels; North Government Wells, reduced 1235 from 11,500 to 10,265 barrels; Plymouth, from 12,960 to 11,880, reduced 1080 barrels; and Saxet (Frio), from 14,000 to 12,936 barrels, a cut of 1064 barrels.

The South Ward field was cut 835 barrels, which lowered its allowable from 17,153 barrels on March 1 to 16,318 barrels on April 1. The Captain Lucey field was curtailed from 1415 barrels to 610 barrels, a reduction of 805 barrels. The Samfordyce field was cut 882 barrels. It now has an allowable of 5845 barrels, compared with 6727 barrels on March 1.

Numerous other fields were reduced more than 500 barrels. Corpus Christi was cut 581 barrels to 9250 barrels. O'Hern was reduced 730 barrels to 4760 barrels. The Saxet Deep Sand was lowered 740 barrels to 4267 barrels. A cut of 763 barrels for the Saxet Shallow gives that area 10,050 barrels. Anahuac was reduced to 12,840 barrels, a cut of 740 barrels. Miocene production at Manvel was given a cut of 516 barrels to 5164 barrels. Sugar Land now has an allowable 605 barrels lower than a month ago. Its allowable is 4491 barrels. Shackelford was cut 617 barrels to 7731 barrels allowable. Tom O'Connor, with a new allowable of 9657, was reduced 593 barrels. North

Texas Allowables by Districts

	March 1 Allowable	March 18 Allowable	April 1 Allowable	Decrease
1 Southwest Texas	25,182	26,347	25,073	1,274
2 Southwest Texas	53,784	55,466	50,515	4,951
3 Gulf Coast	207,023	211,580	193,853	17,727
4 Southwest Texas	148,520	152,699	133,842	18,857
5 East Central	44,015	44,860	40,504	4,356
6 East Central	30,464	33,375	29,689	3,686
Rodessa	39,400	44,059	38,454	5,605
East Texas	453,000	455,123	455,500	*
7 West Central	43,550	45,676	42,265	3,411
7c West Central	20,878	21,473	20,626	847
8 West Texas	188,463	194,966	178,947	16,019
9 North Texas	66,400	67,317	65,487	1,830
10 Panhandle	77,835	78,028	74,200	3,828
Total	1,398,514	1,430,969	1,348,964	82,391

*East Texas increased 377 barrels.

Co.den was cut 572 barrels to 7453. Gulf-McElroy was reduced 667 barrels to 4027 barrels. A 760-barrel reduction lowered Howard-Glasscock to 16,566 barrels. Penwell now has an allowable of 6007 barrels, a reduction of 577 barrels. North Ward was cut 708 barrels to 8850 barrels.

Cuts of 200 to 500 barrels in allowables were given to numerous fields.

EXPECT OVER-RULE

Indications anti-trust suit will go to trial

Madison, Wis.—Belief that Federal Judge Patrick T. Stone would overrule demurrers entered by defense counsel in the government's "oil conspiracy" case was held by observers here last week when the court on Wednesday set April 15 for oral arguments on defense motions seeking bills of particulars.

A ruling in favor of the oil industry on the demurrers, which Judge Stone has had under consideration since March 5, and which the court stated he hoped to have decided within ten days or two weeks from that date, would automatically dismiss the charges pending against 26 major oil companies, three trade journals and 71 individuals and make unnecessary the oral arguments which last week were set for April 15.

Observers here considered Wednesday's action to mean that Judge Stone had completed study of the demurrers and arrived at his decision, but had not yet completed preparation of his formal ruling. In the motions for bills of particulars, attorneys for the indicted companies and individuals are seeking detailed statements of charges filed against them.

The charges grew out of alleged illegal operation of buying programs in the East Texas and Mid-Continent fields which, the government charges, were designed to artificially raise the retail price of gasoline in 10 mid-western states and to "squeeze out" independent jobbers. Pleas of innocent have been entered on behalf of the corporate defendants and by all but 14 of the individuals under indictment.

PIPE LINE ASSETS

Law is upheld by Texas Supreme Court

Austin.—The Texas Supreme Court has upheld the constitutionality of the law providing for the assessment of ad valorem taxes on the intangible assets of Texas pipe lines. The ruling was made in the case of The Texas Pipe Line Company vs. the State in which the oil company sought to prove that the law was invalid.

The Supreme Court refused a writ of error, thereby adopting the opinion written by Justice M. B. Blair of the Third Court of Civil Appeals. The only appeal from the Texas court ruling is to the Supreme Court of the United States.

There is now pending, however, in the Federal Appellate Court at New Orleans a similar suit by another company; and should this suit be successful in the highest United States Court, that ruling would supersede the ruling of the Texas Supreme Court.

Pipe Line Deal

FOUR CONCERNS NEGOTIATING FOR JOINT WEST TEXAS LINE

Houston.—The Texas Pipe Line Company, Consolidated Oil Corporation, Empire Oil & Refining Company and Tide Water-Associated Oil Company are negotiating among themselves for the purchase of The Texas Pipe Line Company's trunk line serving the West Texas and New Mexico districts and extending to Houston, Texas. If negotiations result in the purchase of the trunk line, the new operating company will be The Texas-New Mexico Pipe Line Company, which already has been incorporated under the laws of Delaware.

The Consolidated, Empire and Tide Water-Associated interests some time ago proposed the formation of a new company that would purchase the trunk line, but the transfer involved agreement on purchase price and other important considerations. Although the four companies now are actively negotiating for the purchase and transfer of the long trunk line, it is possible that only three will ultimately be involved.

Take Over Texas Company Line

It is proposed by the three purchasing companies to take over the line under a new arrangement, The Texas Pipe Line Company to remain in the picture as only a part owner of the new operating company, and participating in the same manner as the other three companies. The Texas-New Mexico Pipe Line Company has been granted permission to do business in Texas, but no action has been taken by the State of New Mexico. If the line is taken over by the four companies now negotiating for its purchase from The Texas Pipe Line Company, each company will acquire an interest in the newly organized company.

Construction work was started by The Texas Pipe Line Company late in 1928 on its 470-mile 12-inch welded trunk line from Houston to Crane station, near Church & Fields area, Crane County, West Texas, with a 10-inch carrier extending northwest through Ward and Winkler counties to Jal, New Mexico. The line was placed in operation July 1, 1929, with 13 main line stations between the above two points giving it a rated capacity of 60,000 barrels daily. Trunk line was later extended to about 550 miles, with several hundred miles of gathering lines. Lateral line, consisting of 45 miles of 6-inch was built from San Marcos station to San Antonio, and 39 miles of 6-inch from Rosanky station to Luling and Darst Creek fields.

Crude movement through the New Mexico-West Texas line never attained the maximum capacity after accumulated stocks of oil were removed. Proration restrictions accompanied by the development of an excess of high grade oil in East Texas resulted in The Texas Pipe Line Company shutting down nearly all its booster stations. Electric and Diesel powered centrifugal pumps were removed for service elsewhere from all but the Jal, Crane, Sonora and Rosanky stations, thereby lowering the current capacity of the line into Houston to about 30,000 barrels daily.

The dismantled stations are slated to be rebuilt and placed in operation, as the stockholders of the new corporation control about 40,000 barrels of prorated production in West Texas and New Mexico that will be handled by the line.

In recent years The Texas Pipe Line Company has concentrated its crude runs in Lea County, New Mexico, and discontinued takings from McCamey, Church & Fields, Hendrick and other West Texas areas that were originally served when the line was placed in commission. It was routed through the prolific Yates field, with a booster station located at Iraan, but other buyers would not share their market supply when The Texas Company bid for connections.

The system connects with all important fields in Lea County, except the Hobbs area, and may be extended to the Artesia district, Eddy County, where Repollo Oil Company, subsidiary of Sinclair Prairie Oil Company, has

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70-MILE OIL LINE

To connect new Corpus plant and Placedo

Tulsa.—Barnsdall Refining Corporation has announced plans for the construction of a 70-mile oil line that will terminate at a new 5000-barrel refinery to be erected on the ship channel at Corpus Christi, Texas.

Contract for the construction of the 6-inch pipe line has been let to Williams Brothers Corporation. The line will run from Placedo to the refinery and will be oxyacetylene welded.

The refinery will place Barnsdall in a position to greatly enlarge the scope of its refining and marketing outlets. It will operate on the company's own crude produced at Placedo.

Placedo crude naturally contains little gasoline, but when cracked yields a motor fuel of exceptionally high octane rating. The crude will be charged direct to the cracking unit, and is expected to produce more than 56 percent of gasoline, with an octane number of from 75 to 76.

The refinery will have its own wharfage on deep water where the tankers will be loaded with gasoline to be distributed in the coastwise trade and for export. The low viscosity cracked fuel oil will also be transported by tanker to shipping centers on the Eastern seaboard.

Oil Future Appears Bright to Executives

ASIDE from indicating that the oil companies in 1936 had generally the best earnings for seven years, or since 1929, the annual reports of oil concerns now available are enlightening as mirrors of the thoughts currently in the minds of leaders in the industry.

Oil company officials commonly are close-lipped, and they probably are less talkative when business is good than when it is unprofitable.

But at least once a year the heads of oil companies break their silence and communicate some of their opinions to the public. That is around this time of the year, when they issue annual statements to the stockholders of their companies. In addition to comment on the operations of their companies, they sometimes embody in their statements discussion of the conditions in the industry and comment on general conditions.

Good Earnings Promote Cheerfulness

Naturally, these statements in lately issued reports are generally cheerful, in view of the favorable earnings figures revealed.

While the 1936 earnings generally were the best since 1929, they were for some companies the best in a decade, and for others the best on record.

Companies strong on crude production showed especially favorable results. In 1936 they produced more oil than in 1935, with consumption running at all-time record proportions. Moreover, the posted prices for crude oil were better, having been raised about 10 percent in most districts in January, 1936. The companies therefore did more business at better prices in 1936.

Good Results for All Branches

However, favorable results were not confined to the producing division of the industry. The refining and marketing divisions also made satisfactory showings. This is illustrated by the fact Standard Oil Company of Ohio, engaged only in refining and marketing, reported for 1936 earnings which were the largest since 1929 and which were 55 percent above those in 1935. That company indicated its better earnings resulted not only from increased sales volume but also from a somewhat larger average margin between the costs of crude and the prices realized for products.

The general wholesale price of gasoline in the leading refinery markets in 1936 was about 0.5 cents a gallon higher, on the average, than in 1935, according to the Standard of Ohio report; while retail prices of gasoline in Ohio averaged about 0.6 cents a gallon higher. Prices of most of the other products also were somewhat higher in 1936 than in the previous year. These average increases in 1936 over 1935 were slightly more than enough to compensate for the increase in crude prices in 1936.

However, these gains in the average refined oil prices in 1936 were achieved only against resistance that developed as the year progressed, according to the Standard of Ohio report. Early in the year the product prices were advanced to offset higher crude oil costs, but subsequently they gradually lost the ground that had been gained, declining by the end of the year to about the levels that prevailed at the beginning of the year, before the rise in crude prices.

In the early part of the year the refining and marketing divisions of the industry were successful in passing on the rise in crude oil prices in the form of higher product prices. But as the year progressed, that became more difficult, and by late summer the higher crude prices had been almost entirely absorbed by the refining branch of the industry. But fortunately, the larger volume of business helped to maintain favorable profits for the refining and marketing divisions.

So far, 1937 has brought a general duplication of the price trends of 1936, although at higher levels. In January, this year, as in 1936, crude oil prices were increased about 10 percent; and product prices, wholesale and retail, have been advanced in compensation.

Marketing Proves Profitable

In the Standard Oil Company of Ohio report, W. T. Holliday, president, discredited a widely-held idea that the marketing branch of the oil industry is unprofitable and that the large integrated companies cannot market within the margin between the wholesale tank car price of gasoline and the tank wagon and service station prices. The Standard of Ohio company's experience demonstrates, it was asserted, "that it can and does operate its marketing department at a profit on the basis of prevailing wholesale tank car prices. The losses which the company suffered during the depression years were suffered in the refining department in periods when the entire refining branch of the industry was operating at a great loss because of the low margin between crude oil prices and the wholesale tank car prices of refined products." The peculiar advantage of Standard of Ohio, a refining-marketing concern, according to the report, is its unusually large volume of sales in relation to its investment.

The report brought out further, however, that during the past 20 years the margin between crude oil costs and realized prices for products has been gradually narrowing. Consequently, success in refining and marketing demands continuously increasing efficiency and economy in refinery operations, marketing activities, and transportation costs.

Incidentally, Standard of Ohio has not adopted the Iowa Plan, of leasing out all service stations to independent dealers and discontinuing retailing and posting of retail prices. While the company has leased

CHEERFULNESS pervades statements in annual reports of oil companies. Earnings in 1936 best since 1929, and prospects are promising. Business volumes heavy, and prices favorable.

By L. J. LOGAN, Associate Editor

out some stations, it still operates directly practically all of the larger stations, where large volumes of sales make for low operating costs.

Prospects Considered Promising

The statements of oil company executives indicate that 1937 is generally expected to bring a continuation of favorable earnings. Consumption of petroleum is expected to reach a new all-time peak, and prices are expected to continue favorable. So far, the hopeful expectations for 1937 have been fulfilled. Demand has been running at unprecedented levels; crude prices were raised about 10 percent in January, and product prices immediately were advanced in compensation, at the refineries and the service stations.

The hopefulness regarding 1937 was illustrated in the statement of W. G. Skelly, president of Skelly Oil Company. He said, "As to the company's prospects for 1937, I feel justified in saying that your management looks forward with confidence. It is not unlikely that in 1937 the company will set new high records for itself in volume of business and in profits."

In his statement, Henry M. Dawes, president of The Pure Oil Company, asserted there is "a general feeling that the world-wide situation in the oil industry would indicate that higher prices for crude oil are likely to prevail during the next few years."

J. Howard Pew, president of Sun Oil Company, pointed out that careful authorities have estimated an increase of from 8 to 10 percent in the demand for petroleum products in 1937.

Profits Up Over 50 Percent

For all the leading oil companies in the aggregate, profits in 1936 probably were more than 50 percent greater than in 1935. For some important companies the 1936 earnings were two or three times as large as in the previous year. Although reports already have been issued by a considerable number of the oil companies, some of the concerns, especially large companies, still have not finished compiling their data.

The profit of Phillips Petroleum Company last year was the largest in 10 years, and showed a 33 percent gain over that in 1935. British American Oil Company in 1936 had the best year in its history. The 1936 earnings were the best since 1929 for Skelly Oil Company, Consolidated Oil Corporation, Pacific Western Oil Corporation, Atlantic Refining Company, Standard Oil Company of Ohio. They were the best since 1930 for Union Oil Company of California, Ohio Oil Company, Sun Oil Company. Similar improvement was shown also by most of the other companies that have issued reports.

Large consumption of petroleum was given credit in many of the reports for promoting the favorable profits of 1936. In that connection, the Sun Company report, for example, stated: "At the year's end the number of motor vehicles registered in the United States, 28,270,000, was an all-time high; the year's consumption of gasoline and lubricants by these vehicles also set a record; and a production of 57,000,000 barrels of kerosene set a new all-time mark . . . Finally, the demand for fuel oil and gas oil gained even more than that for gasoline and lubricants. To meet these unprecedented demands, slightly over 1,089,000,000 barrels of crude were produced in 1936 and about 503,000,000 barrels of gasoline; both being new records."

The 1936 consumption of gasoline in the United States was pointed out in the Standard Oil Company of Ohio report as being 26.5 percent above 1929.

Conservation and Reserves

Subjects that came in for particular attention in the annual reports of the oil companies included the following: proration and conservation, crude reserves, financing, plans for making capital expenditures, labor conditions, the menace of increasing taxes, and plans for expansion or modernization of producing, refining, transportation and marketing facilities.

For stability of the industry last year, some of the credit was given to the Connally hot oil law and the Interstate Compact, in reports of Sun Oil Company, Phillips Petroleum Company, and The Pure Oil Company. The Skelly Oil Company report stated: "The proration system is approved by the oil industry as a means toward economic stability, and is functioning generally well."

The Sun Oil Company report embodied an extended discussion of crude oil reserves, expressing confidence that the oil industry can successfully keep the country's motor cars running. The report stated that much value will come from the American Petroleum Institute's continuing committee of experts to make yearly surveys of available crude oil reserves.

Active in Acquiring Acreage

In view of the continuing growth of petroleum consumption, most of the oil companies are awake to the need for new oil-bearing properties to replace those that are being depleted.

Companies that reported they made net additions to their underground oil reserves in 1936 included Sun Oil Company, Tide Water Associated Oil Company, Houston Oil Company, Texas Pacific Coal & Oil Company. Sunray Oil Corporation acquired leases in West, East, and South Texas, Oklahoma, Kansas, and Southern California. Pacific Western Oil Corporation entered the Mid-Continent, acquiring acreage in Kansas and Texas, and likely will begin drilling

[*Continued on page 63*]

Future of Petroleum Exploration

THE art of prospecting for petroleum has been developed to a high degree of perfection, but it has developed naturally as an outgrowth of the production department. Functionally, no branch of the industry is more important than the exploratory branch, and it should be established as a department as independent as refining.

PROSPECTING for new deposits is of prime importance to the petroleum industry and is a part of the ordinary routine day-by-day business of that industry to an extent not true in any other type of mining. This condition arises from no fault or virtue inherent in the industry but rather is a result of the excessive demands of increasing consumption—demands which are really exorbitant in ratio to any reserve which we possess.

Need Over 10 Major Fields Yearly

It could hardly be otherwise for an industry faced with such demands for its products. Currently, the equivalent of 10 to 12 10,000,000-barrel pools is required annually to keep proved reserves, which have never been too great, in balance with the annual consumption of 1,000,000,000 to 1,200,000,000 barrels now indicated for the United States alone. We now consume annually more petroleum than was produced during the first half of the duration of the industry. We consume annually more than the equivalent of five or six Spindletops; two or three Long Beaches, Cushings, Salt Creeks, Bradfords, or Oklahome Cities; one and a half Conroes, Yates, or Kettleman Hills; or a third to a fourth of a phenomenal East Texas pool. All the oil produced in Pennsylvania since the beginning of the industry or all the oil produced in the Gulf Coastal Plain of Texas and Louisiana, as a result of 35 years of intensive search and development, is sufficient to meet only one year's requirements. The entire past production of California, the banner state, would meet our national requirements for only five to six years at the present rate of consumption. In fact, all the petroleum hitherto produced in the 77-year life of the industry in the United States is sufficient to satisfy our requirements at the present rate of consumption for only 15 to 17 years.

We can estimate with reasonable accuracy the amount of the nation's proved reserves and we can speculate as to the amount of oil yet to be discovered. Reserves almost always appear to be low or inadequate, and even in the midst of over-production, the individual company is concerned for its own reserves, and the industry as a whole searches actively for the pools which must produce our supplies only a few years hence. We have been prematurely alarmed in the past, or so it now appears, but although we cannot prove it, common sense tells us that we cannot continue at our present rate of production indefinitely nor, in terms of the life of a nation, very far into the future.

That we as a nation should live only for today and willingly and carelessly deplete our petroleum reserves to the point where we may soon be left with only an inadequate and high-cost production and, the greatest consuming group in the world, at the mercy of foreign supply and foreign prices, seems to me to be unthinkable.

Oil Conservation Is Wise

Conservation has been sanely defined as wise use. The wise use of our petroleum resources requires that we do several things, among which are:

1. Admit and even welcome foreign oil in so far as it can be done without too great dislocation of our own industry;
2. Encourage American companies to secure foreign reserves;
3. Advance the technique of prospecting for oil;
4. Advance the technique of producing oil;
5. Increase the efficiency of refining processes;
6. Increase the efficiency of our use of motor fuel; and
7. Refrain from the less desirable uses of oil, such as burning it for fuel.

I do not expect agreement with this outline. Parts of it may be impracticable. I do not even propose to discuss it further.

We, as geologists, are concerned chiefly with the advancement of the techniques of prospecting and production. The petroleum geologist is generally regarded by the industry as well as by his brother geologists as a prospector. It is our particular business, and it is, therefore, to the prospecting problem that I address myself.

The oil industry is generally regarded as having commenced with the completion of the Drake well, a well 69½ feet deep and pumping some 25 barrels daily, completed at Oil Creek, Pennsylvania, on August 29, 1859. As a result of the development which followed, the United States became a supplier of lamp and lubricating oils to the world. Gasoline was of no consequence—a waste by-product. By the end of the century, about 1,000,000,000 barrels of oil had been produced.

With the beginning of the present century, fuel

By E. DeGOLYER

Before Twenty-second Annual Meeting of American Association of Petroleum Geologists, March 17-19, 1937, Los Angeles.

In the United States

SOME of the advantages that should follow independent orgnization of the exploratory branch are: More effective results following the placing of definite responsibility; the development of cost accounting for oil finding; and the development of definite drilling equipment and technique for exploration vastly different from the existing.

oil became important and the automobile came in. During this fuel oil transition period ending, say, in 1910, we produced another billion and a half barrels of oil.

During the gasoline or motor fuel period we have produced some 16,000,000,000 barrels of oil and are now at an all-time peak of about 325,000,000 barrels of oil per day.

It was the pressing demand for motor fuel which forced the oil industry to rationalize and develop its prospecting technique.

The historical development of a rational technique of prospecting for petroleum in the United States, the exploration of which is certainly much further advanced than that of any other petroleum-bearing area of major proportion, should be of great interest to the economic geologist as an example of the possibilities of the development of the art of prospecting in a mineral industry and to the industrialist as indicating trends which may be of great future importance to him.

Petroleum was first discovered accidentally and in quantities great enough to make it a nuisance in wells drilled for brine in Pennsylvania, West Virginia and Kentucky. It was first discovered purposefully by the Drake well. This first well was drilled near an oil spring by men whose entire knowledge of the occurrence of petroleum could not have been greater than a general recognition of the fact that oil could sometimes be skimmed from the flow of springs and that it was often found in wells drilled for brine.

The second oil strike was made by a blacksmith at Franklin who bought iron on credit, hammered out rough drilling tools on his own anvil, and with the aid of his stalwart son "kicked down" a well to successful completion at a depth of 72 feet near an oil spring on his own farm. It was as easy as that.

Following these discoveries, prospecting by drilling to exceedingly shallow depths was continued by wildcatters—gentlemen adventurers—who were sufficient in numbers and enthusiasm to discover new pools faster than they were required. Their prospecting continued on the basis of direct indications—oil or gas seepages, oil found more or less accidentally, or the occurrence of bitumen impregnated rocks—until most of the major oil regions of the United States had been found.

Geology Entered in 1913-1914

Although geologists early recognized the structural occurrence of the petroleums, little was done toward using geology as a prospecting tool until about 1913-1914 when it began to be generally adopted by the industry.

The history of geological prospecting from that point on is largely one of broadening views as to the nature of structures adequate to trap oil into commercial pools and of the exhaustion or near-exhaustion of techniques and the development of new techniques for finding such structures.

The first geologic work was largely surface geology for the discovery of structure. Drilling was to shallow depths. Most of the oil-bearing areas were mapped, structures with adequate surface expression were found and explored, and by 1920 there seemed to be but little more to be done by this method.

Subsurface studies have always been important. Carried on at first as a part of the normal geologic survey of any area, and largely on the basis of drillers' logs, by 1917 such studies had begun to be specialized and the work of a special department. Drillers' logs were poor and efforts to construct more exact logs on the basis of sample examinations were made. By 1925 micropaleontology began to form the real basis and impetus for subsurface studies, though many areas still rely entirely or nearly so on lithologic determinations. This subsurface technique, dependent as it is upon the drilling of wells, will probably continue to be the backbone of petroleum geology as long as exploration continues.

Geophysical Science in 1920's

In the early 1920's the science of the physicist was brought to the aid of the geologist for the solution of the problem of oil prospecting, and geophysics became important. Its first and greatest successes have been in the finding of additional salt domes in the Gulf Coast area—an area previously amenable only to a type of prospecting hardly more rational than random drilling. With the vigorous and hectic campaigns which followed the successes of these new methods, their use spread until we can now see the possibility of exhaustion or at least the point of considerably diminished returns from the use of existing techniques.

Geophysics has grown up too much alone for the greatest advancement of its usefulness as a prospecting tool. In the broadest sense, it is the science of

earth physics and includes geology among a host of other sciences. As we know it in the petroleum industry, however, it is strictly a geological tool—new implementation for the geologist who, by its use, can secure important and critical geological information not otherwise available to him.

The interpretation of geophysical data in useful terms is ultimately a problem of geology. The correct solution is generally a question of geological probability and in many cases is so simple and obvious that the need for expert solution is practically nil. The earliest and greatest successes of geophysics —the search for the so-called shallow salt domes of the Gulf Coastal Plain—was an operation of this type. Velocities of 16,000-18,000 feet per second on a time distance curve from a refraction profile was almost positive evidence of the existence of a salt dome in this region and not to be interpreted otherwise. This unique interpretation was as well known to the geophysicist as to the geologist, and a whole congress of geologists could not have improved the interpretation.

Most of the problems which involve geophysics today, however, are much less simple, and I believe that we can agree, geologist and geophysicist alike, that future problems are likely to become increasingly complex and to require more and more geological direction as to the placing of points from which information is to be secured and that finally skilled geological interpretation is essential.

The history of prospecting for petroleum in the United States is also largely a question of a series of new techniques—of new methods of attack. Each of these in turn has been used vigorously over large areas until its usefulness has been largely exhausted. We started with surface mapping, but by 1920 much of the surface of the known petroliferous areas had been mapped. Core drilling followed until the cream of the core-drill possibilities was gone. Geophysics came in and failing further advances or the development of new methods will in turn serve its purpose and become of less importance. Whether some new geophysical method, possibly a direct one, will in turn be developed in order to meet a pressing need of finding the so-called non-structural oil is a matter for speculation. Serious research to such end is under way.

Subsurface Studies to Continue

As already intimated, subsurface studies are the one continuing technique which will probably continue as long as we have an industry. Even this technique changes, however. We started using drillers' logs, then determination from samples and cores, then paleontological determinations with the aid of micropaleontology, now electrical logs. It is perhaps not too much to look into the future and see deep wells drilled for geological information alone. None of these techniques is ever entirely exhausted and most of them overlap, but, except for subsurface studies, most of them reach a marginal and practically exhausted stage.

No consideration of prospecting is even approximately complete which fails to acknowledge the tremendous importance both as prime discoverers and as contributary discoverers of the thousands of wildcat wells drilled casually or at random by individuals, syndicates, etc., without benefit of geologic clergy. Geologists generally have been conservative, and it is the venturesome wildcatter who has stepped out and opened up new areas. This is a brilliant example of the effectiveness of multiple effort. The development of the petroleum reserves of the United States has been far more of a result of cooperative effort than we are likely to ever realize.

Notwithstanding its vital importance to the individual enterprise, to the industry, to the nation, and to the world, prospecting has been a function of the producing branch since the earliest days of the industry. Wells were shallow, definite, and probably less expensive than any other type of prospecting could have been in the early days of the industry, even if a technique of prospecting had been developed, which it had not, and there were venturesome souls willing and able to drill enough wildcat wells to keep the industry in its characteristic rhythm of over and under-production.

Prospecting Should Be Separate Work

The trend over the 20 years during which prospecting has been emerging from the broader field of production as a separate and definite technique, as well as the necessities of the future, indicates the establishment of prospecting or exploration on a basis almost as distinct from production or exploitation as is refining or marketing.

The exploration department of the future will include geological work; subsurface, surface, stratigraphy, paleontology, geophysics; scouting, engineering, and land and leasing, as it does effectively in many of the best organized companies of today, and it will also include organization for the drilling of exploratory wells. Its business will be strictly that of securing oil reserves, and for greater effectiveness it will be relieved of all other duties in so far as possible.

Three definite and outstanding advantages should result from such form of organization. First and foremost should come the development of special equipment and practice for the drilling of exploratory or wildcat wells. Secondly should come the development of cost accounting and statistical control adequate to determine the all-important cost of oil finding. Thirdly, the focusing of attention on exploratory effort and the fixing of responsibility for degree of success should advance materially the development and application of the technique of prospecting.

Practice Improvement Would Result

Exploratory wells — wildcats — are being drilled with the same type of equipment and by the same practice as wells intended to develop proved fields. Located in unproved ground and often without definite objectives, they are generally more costly than development wells. Ours is unique among the mineral industries again in that the prospect hole is more costly than the mine.

This condition exists because we have never considered ourselves able to prove the existence of commercially important oil deposits without actually completing a producing well. I suggest, however, that with improved coring, core analysis, electrical logging, casing perforation, stage cementing, drill stem testing, etc., we have advanced very far in perfecting testing methods and that we should be near the point where we can determine whether or not oil in commercial quantities is present without actually completing a well. Properly supported, engineers

should be able to develop a comparatively light and mobile rig for drilling holes adequate only for test purposes quickly and cheaply. It is even conceivable that the future may see wells drilled solely for the purpose of securing electrical logs. If negative results should be secured, in most instances the prospect would be condemned as surely as by a large and expensive hole. If positive, the actual drilling of the discovery producing well and the setting in motion of the long train of consequences which follow discovery—the oftentimes enforced development of an oil field—might be postponed to suit the convenience of the prospector.

Stratigraphic Prospecting to Increase

I believe that students of the problems of prospecting will agree that we are reaching the point where we shall be prospecting in the United States more and more for the so-called stratigraphic rather than the purely structural accumulations and that these pools will require considerably more drilling for discovery than the structural type of pool. Many of the wells will be drilled essentially for geological information—glorified core drilling. This development of prospecting technique will make it even more imperative to develop a technique of prospecting drilling distinct from and much cheaper than existing types of drilling for production.

Cost Accounting System Needed

Second in importance should come the establishment of cost accounting as a control over our prospecting effort and more critical statistical analyses of our successes and failures in prospecting. Above all, we should determine the cost of oil finding—the cost of reducing oil reserves to reasonably knowledgeable possession and one of the most important costs in the entire oil industry.

Company accounts are not set up generally in a form which makes the determination of prospecting costs a problem for easy solution, and this is particularly true for finding costs. Most companies determine an over-all production cost per unit barrel, which includes most of the various components of a finding cost, but it is essentially the cost of finding oil to be produced in the future, and in the normal per barrel production cost it is combined with the cost of mining oil largely found in previous years, and is arbitrary and inexact. It is of little or no value as a cost control to prospecting effort, although as a practical business matter the production cost per barrel figure is probably better than the more exact and correct cost would be, since it combines the actual mining cost with the current finding or reserve replacement cost.

One of the difficulties in determining finding costs is that accountants have to make assumptions upon which to proceed; they may even have to make more than one set of assumptions and determine their costs within limits rather than as precise figures. Furthermore, the essential estimate of reserves is likely to be only approximate at a time near discovery and to become exact only after the property has been fully developed and has produced for some years. Finding costs will also vary tremendously when calculated for periods of time as short as a single year. I have seen the finding costs for a major company where those for the worst year were 27¼ times as great as those for the best year.

As to critical analyses of statistics, we do not even have general statistics for the industry as a whole on the results and hazards of prospecting. This is a problem with which the American Petroleum Institute and the American Association of Petroleum Geologists might well concern themselves.

As geologists, we have been too prone to accept our failures philosophically and to spend too much time in considering the development of our successes. If I might draw upon my own experience in developing a geophysical method, I would recommend that we waste as little time as possible on the successes but that we re-study critically and seriously the failures. It is the proper method to advance and perfect the technique of prospecting.

I fear that I have not made the desirability and even necessity for cost accounting in prospecting as clear as it might be. The actual cost of producing oil is the cost of finding—the cost of reducing to knowledgeable possession—of getting title to the oil in ground—plus the cost of mining the same oil. How can you decide whether to buy proved oil or prospect for it if you do not know what the cost of finding is likely to be?

Cost control can even wisely go much further; e. g., determining the unit cost of finding prospects. It may be that prospects can frequently be bought more cheaply than they can be found. Do we know at present?

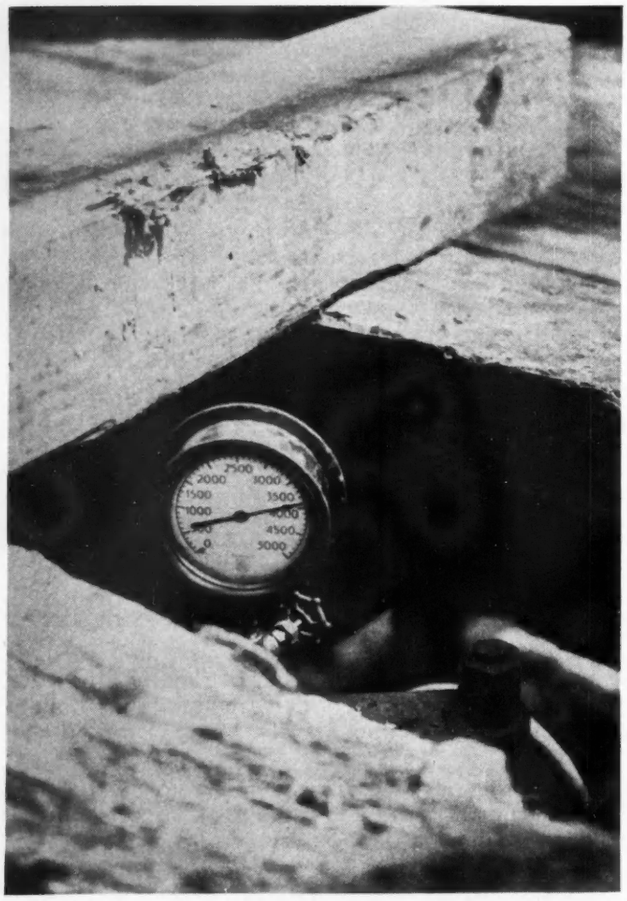
All in all, our necessity is for a considered and critical control, cost and statistical, of this normal and essential part of the oil industry.

Again let me say that the establishment of a separate and distinct prospecting or exploratory department should result in the focusing of attention on exploratory effort and the fixing of responsibility for the degree of success, and should result in better and more effective work being done than by any other method. Fixing of responsibility for increasing their company's reserves and relief from all outside and extraneous duties, even the pleasant one of watching an unimportant well being "brought in" in a developing field, can only result in increasing the effectiveness of a company's prospecting effort.

Dependent Upon Reserves

Finally, the health of any oil company today is dependent upon its reserves. This is even true for the industry as a whole. The industry cannot deny that it is, to borrow terms from the mathematician, a dependent function of an independent variable—exploration—and exploration is, as I have said before, a part of the ordinary routine of the petroleum industry to an extent not true for any other mineral industry. Proved reserves in terms of annual consumption may be expressed for coal in thousands of years, for iron in hundreds of years, for copper in tens of years, but for oil they are always expressed in years and not too many of them.

Maintaining reserves for a company or for the nation can only be accomplished by increasing the effectiveness of prospecting. Exploration is a highly skilled and highly technical process on averages and likely to become more so in the future. It is my belief that the future of petroleum exploration lies in its organization as a separate department, developing and refining its equipment and technique, and accepting clear responsibility for the success or failure of its efforts.



Handling

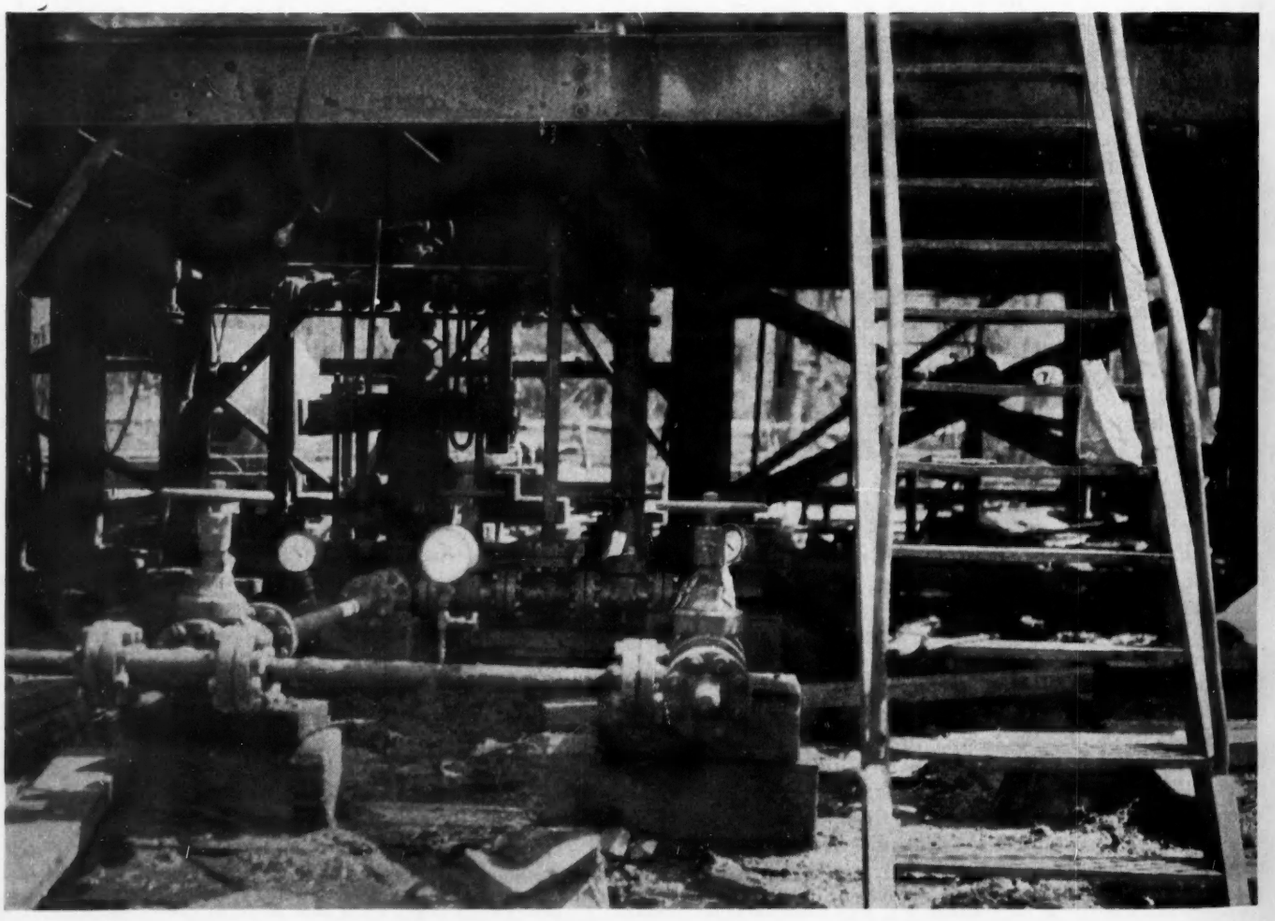
By BRAD MILLS, Associate Editor

RECORD operating pressures are being successfully handled in the Old Ocean, Texas, field by Harrison and Abercrombie. The recent completion of a good producing well at 10,293 feet set a new standard in Gulf Coast development, and created a pressure problem that has been solved by unique flow arrangements. The well was drilled to 10,427 feet, but is producing from above bottom.

With a surface pressure on the tubing of 3900

Left: The constant flowing pressure on Harrison and Abercrombie's Bernard River Land Company 3, latest completion at Old Ocean, is 3900 pounds as shown here. This pressure is reduced through a series of chokes and regulators.

The mass of fittings below show one side of the flow arrangement. Two chokes are used on each side of the drop from either wing of the Christmas tree. The primary chokes are located on the Christmas tree wings.



# of Record Pressures

ARE SOLVED AT OLD OCEAN BY UNIQUE FLOW ARRANGEMENTS

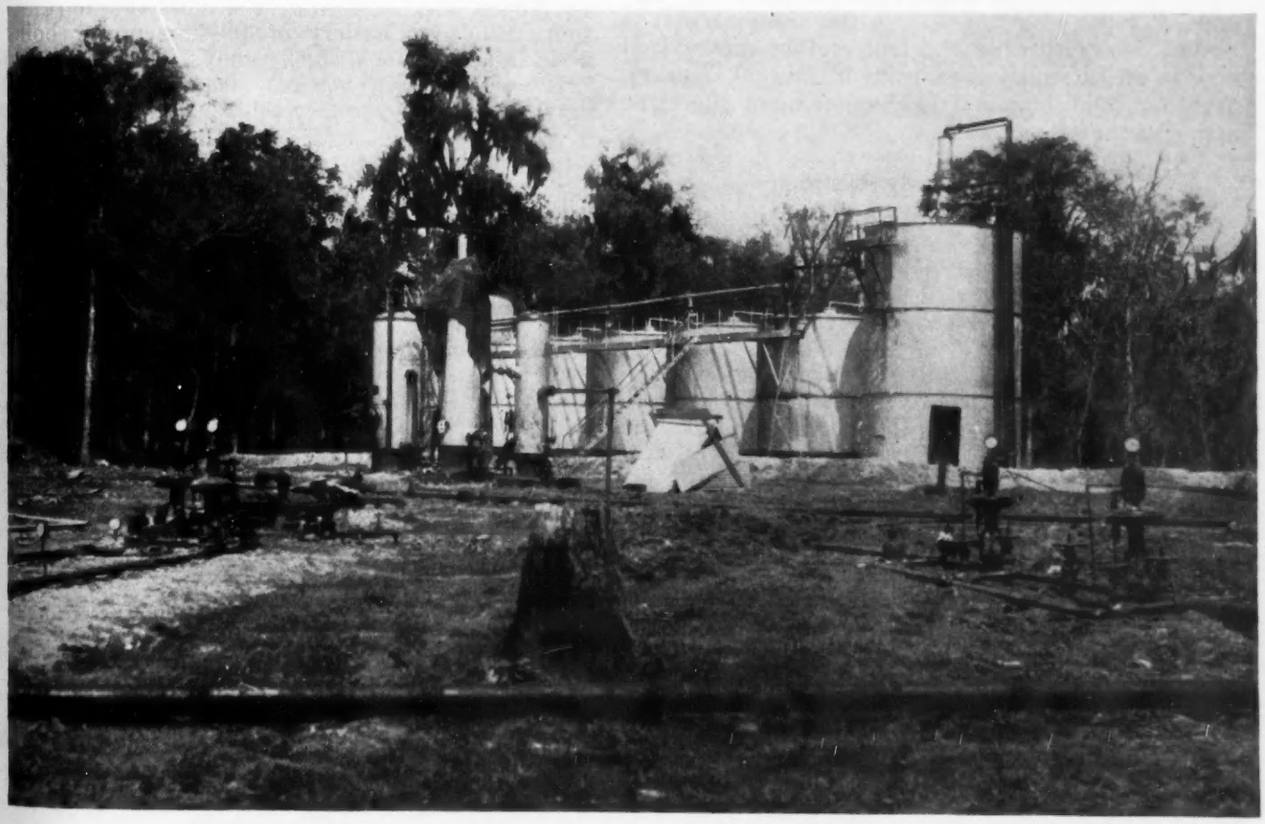
pounds, the flow of gas and very light oil requires careful choking and regulating. All Christmas tree connections are tested to 6000 pounds before being installed. Although the greatest hazard exists at the well, the high pressure also necessitates extra precaution and equipment between the well and the flow tanks.

Use Double Choking

The Christmas tree and flow connections are the heaviest obtainable, and the arrangement is one of the most elaborate yet used in any field. The use of a double choking system sharply reduces the pressure on flow lines and gives a safety factor not found where a single choke is used. The present development plan calls for all-flange connections on Christmas trees, and only one screw connection was used on the surface equipment at Bernard River Land and Development Company 3, the most recent completion that established a depth record for the Gulf Coast.

The choke and flow arrangement at the well was developed to meet field conditions and to give a flexible system that permits easy changing of secondary chokes under medium pressures. Two main chokes are provided on the wings of the Christmas tree. The flow passes immediately to either or both of two 2-inch lines running horizontally and at right angles to the Christmas tree wings. These 2-inch flow or lead lines drop down to a level near the ground at a point about 10 feet from the well. Each flanges into a heavy 2-inch tee, and again the flow is divided two ways. This double drop arrangement from each wing of the Christmas tree permits the use of four flow channels. On either side of both tees near the ground level is a choke that prevents throwing an excessive pressure on the flow lines to the tank battery. The flow to the separators normally passes through either or both of two lines, but it would be possible to provide four separate flow lines, one for each secondary choke. With the present arrangement the flow handled by each two-choke combination is combined and sent to the separators through one 2-inch line.

By using the double choking system, the highest



The regulators in the foreground are a part of the pressure reducing system employed between the well and storage. The stage separators are shown in front of the tanks.

pressure is placed on the Christmas tree proper, which is best adapted to handle it. The arrangement chiefly applies to the most recent completion, but similar installations will be used in the future. The chokes and regulators between the well and the separators reduce the pressure by stages that permit normal operations. It is possible to use only one stage of separation after the flow has passed through both chokes.

Two and three stages of separation were required to handle the flow from the first completions, where a single choking stage was employed. Although 1000-pound, 500-pound and 125-pound separators, connected in series, were assembled to handle the production from Armstrong Plantation 1, separators in two stages, 1000-pound and 300-pound, are considered adequate. The surface pressure on this well has remained constant at 3390 pounds since it was completed and placed on a steady flow late last year.

Heaters Prevent Freezing

Two types of heaters have been installed to prevent freezing before separation and loss in line pressure, although this trouble has been reduced to a minimum. The flow from Armstrong Plantation 1 passes through a jacketed steam heater near the well before going to two-stage separators. The separators are enclosed in a small house near the well. During favorable weather conditions freezing does not give serious trouble.

A special hot water heater has been installed to handle part of the flow from other wells. This heater was designed by the company's superintendent and consists of a long series of coils in a 50-barrel tank that is filled with water. The tank is elevated to permit the installation of a gas burner for heating the water. The well flow obviously passes through the coils en route from the well to the separators. It is not necessary to raise the temperature of the well flow to an extremely high point to prevent freezing. Weather conditions and production rates affect the action of the separators.

Production Nearly Distillates

The Old Ocean field yields oil from several levels in the Frio formation. The area was discovered by Harrison and Abercrombie in November, 1934, with the completion of Bernard River Land Company 1 as a 500-barrel producer at 8651 feet. The oil varies in color from a light blue to a light amber. The liquid ranges from 50 to 67 gravity and closely approaches a distillate. The wells completed between 8600 and 9000 feet are yielding a much lighter oil than the more recent deep completions. The oil cannot be classed as a true distillate, since it has a decided crude oil tint. It resembles kerosene and colored commercial gasoline, but it burns with little flash and closely parallels alcohol in this respect.

The field has been called "an underground refinery," but such a reference hardly describes the area. The well flow unquestionably carries a large quantity of gas, which brings the smaller flow of oil to the surface. The oil is a more stable product than would be expected of such a light fluid.

The structure has not been defined in any direction, but limited development indicates that the field is one of considerable importance. The several producing levels in the Frio formation and the tendency toward a heavier and more stable oil as drilling progresses points to a higher oil recovery than would be expected from the gassy upper sands.

The upper formations at Old Ocean present few serious drilling problems, but the high pressure lower formations require every precaution. The blowout prevention equipment alone represents a cost as great as the total drilling cost of the average well of 20 years ago. When the high pressure stratum was encountered above 10,000 feet in Armstrong Plantation 1, heavier mud and blowout equipment were obtained barely in time to prevent serious trouble. The experience in this well, however, served the operators to advantage in the following drilling operation.

The most recent completion, Bernard River Land & Development Company 3, was pudded late in 1936 and completed the first part of March, 1937. Particular attention was paid to the drilling mud, and it was considered a real achievement that the weight of drilling fluid never exceeded 11.5 pounds per gallon. During drilling operations below 10,000 feet, the mud was tested every 15 minutes for weight and viscosity. Weight material and conditioners were added as needed. A small Christmas tree, believed to have been the first of its type, was used on the mud intake line between the pump and the well head. The arrangement provided additional means of fighting the pressure, and was equipped with chokes.

Heavy Drilling Machinery Used

Drilling equipment used is the very heavy type. Lighter equipment was used for a short period of bad weather when it was impossible to transport heavier equipment to the well site, but trouble ensued. Even the heaviest equipment obtainable barely handles drilling operations at Old Ocean during certain phases of progress below 9900 feet. Some of the equipment used in drilling the most recent completion included a battery of 125-horsepower boilers, 20-inch and 18-inch slush pumps, heavy unit type draw works, twin vertical steam engine, 136-foot derrick, and heavy rotary table.

A 20-inch hole was started and drilled to 45 feet, where 20-inch conductor pipe was set. An 18-inch hole was drilled to 1270 feet and 13⅜-inch casing cemented at that point. After drilling a 12¼-inch hole to 6069 feet, a string of 9⅝-inch casing was cemented. An 8⅝-inch hole was drilled to 10,004 feet, in which a full string of 7-inch casing was cemented. This combination flush joint casing string was one of the longest on record. The well was drilled to 10,427 feet, but production is obtained between 10,263 and 10,293 feet. About 250 feet of blank screen was set between the 7-inch casing at 10,004 feet and the top of the producing zone. This section was preceded by 30 feet of slotted screen opposite the oil zone.

Drilling to more than 10,000 feet at Old Ocean represents a heavy outlay of equipment and expense, due to the natural hazards of depth and the very high pressures encountered. The blowout equipment used while drilling a single well represented an original valuation of almost $10,000.

In handling the high pressures after completion, expensive surface equipment must be used. The natural hazard of a surface pressure of almost 4000 pounds calls for every precaution known to a modern production department.

Before twenty-second annual meeting of American Association of Petroleum, March 17 - 19, 1937, at Los Angeles.

The Interpretation of Geophysical Data

By DR. L. W. BLAU, Geophysicist,
Humble Oil & Refining Company

THIS is a part of the great problem—the problem of geophysics and the problem of all prospecting and geology—the problem of interpretation. The solution is not in sight but it behooves the geologist to work earnestly and sympathetically with the physicist to the end that their results may be translated, as exactly as possible into structure maps—into the language that the oil producer and executive have already learned to read.
(BY E. DeGOLYER)

IT is the purpose of geophysical and geological investigations to learn more about the structure of the earth's crust; in commercial work, to find structures favorable to the accumulation and retention of oil or other minerals, or to locate these deposits directly. In the final analysis, information obtained from geophysical measurements is used to supplement existing geological information. The question naturally arises whether the interpretation of geophysical data should be independent of geology or colored by what is known or surmised of the geology of the area investigated.

It may be assumed that most geophysical work is done in areas where the geological information is not complete; it may also be assumed that much geophysical work yields results which are interpretable to greater depths than have been reached by the drill.

Much has been said and written about the interpretation of geophysical data; in these discussions the underlying assumption, the validity of which has been neither questioned nor in investigated, has been that something can be added to the results of geophysical measurements which will render the data more directly expressible in terms of geological nomenclature. It has been further assumed that interpretation in terms of geology must be done simultaneously with the computation of the geophysical results, so that the interpreting geologist guides the geophysicist and aids him in the solution of problems as these arise. I refer you to an article by O. L. Brace on "The Interrelationship of Geology and Geophysics," Bulletin, American Association of Petroleum Geologists, February, 1937.

Geophysical data result from geophysical measurements of certain physical properties; the geophysicist endeavors to learn the physical causes underlying, or responsible for, the observed effects. The geologic effects observed by the geologists are due to geologic causes (fundamentally, of course, there are no geologic causes, only physical, chemical, biological); it is the function of the geologist to correlate the observed effects and to deduce the geologic causes.

It may be assumed, and experience has frequently borne out the assumption, that geophysicists are less reluctant to ascribe the same cause to identical effects observed in different areas, than geologists who are guided mostly by similarities in the observed effects. Thus geophysicists postulated faulting in the Gulf Coast sediments long before faults were observed, and reaped the mild ridicule of geologists who claimed that "these sediments don't break, they bend." Quite to the contrary, sediments behave like plastics and, therefore, always break under tension as for instance over a deep salt dome. Geophysicists are thus less reluctant to produce "unorthodox" pictures and are probably for the same reason destined to replace the wildcatter whose function it is, according to Joseph E. Pogue, Bulletin, American Association of Petroleum Geologists, February, 1937, page 158, "to bring into view the 'unorthodox occurrences.'" To the extent that the geologist is guided entirely, in the interpretation of his data, by what is known or believed to be possible, to that extent he must rely upon the geophysicist or even on the wildcatter to uncover such "unorthodox" occurrences.

However, the interpretation of geophysical data in terms of geologic causes requires an unbiased mind which is ready to accept the data at face value and to make those assumptions regarding causes

which the observed effects seem to demand whether these assumptions are in accordance with geology as it is known or not. It is a long and arduous road from observed physical effects to geologic causes.

Geologist and Geophysicist

May we also inquire what the field geologist and his brother, the office geologist, conceived by O. L. Brace, are supposed to do to the geophysical data? Will they be able to deduce the anomalous sand conditions at the Smackover field in Arkansas from the geophysical data? They will not; under the conditions given by Brace they will work out a depression from reflection data. Moreover, in order to be able to make corrections, they must have two wells, one on the structure and one off, and how can they locate the well on the structure if the data do not indicate it? Even wildcatters do not like to drill depressions. Or are these geologists to take the geophysical data and use them, correct them, reject them at will and work out a picture in conformance with geologic knowledge? It behooves the geologic profession to take stock and call to mind the prospects which were missed because pertinent data were disregarded; if data were treated with more respect it would not so often happen that the rival company's new oil field is found in the files. And why? Because the area was worked, it then stands revealed, the data showed the anomaly (as indeed they must) but some geologist drew an acceptable picture. I call your attention to the fact that a dozen or more wells were required to impress upon geologists the importance of the faulting associated with the structure in the Mexia-Groesbeck district. "Structure of Typical American Oil Fields," Vol. II, Page 309.

Type Data Obtained by Geophysics

Before proceeding with the discussion, it is desirable to review briefly the nature of the data which are obtained in geophysical prospecting.

The magnetometer measures the variations of one or more components of the earth's magnetic field over the area investigated. The results are as a rule plotted and lines of equal intensity are drawn. If a magnetic anomaly is revealed it may, or may not, be possible to draw conclusions as to its structural causes on the basis of information obtained from measurements over an area of known subsurface. If the anomaly is different from that on a drilled area, little can be done; if it is similar, the structure may, or may not, be similar to the known structure.

Data obtained by the torsion balance, the gravity meter, or the pendulum are also plotted, and isogams, or lines of equal gravitational acceleration, are drawn. If an anomaly exists, it may be a gravitational high or low and may be due to an anticline or syncline, shallow dome with or without cap rock, or a deep-seated dome, in which case the presence or absence of a cap would probably make little difference and a gravitational minimum would be observed.

In refraction shooting, times and distances are measured; from these data, velocities and depths to refracting horizons are computed. In reflection shooting, also, times and distances are measured. Vertical average velocities are determined either independently by well shooting, by refraction work, or, in the case of clear and sharp reflections, from the reflection data themselves. Probably depths to the reflecting layers are then calculated on the basis of assumptions as to wave-paths, velocity discontinuities, absence of multiple reflections, etc., which are not known to be valid or tenable, which cannot always be further investigated, and which may probably prove rather elusive upon further study on account of the numerous difficulties, such as inaccessibility of different layers, multiplicity of acoustic horizons, to mention only two, which are inherent in the problem.

In the electrical methods, potential distributions, transients, or field strengths are measured and anomalies in these quantities are ascribed to anomalies of geologic structure. All problems arising here have, however, an infinite number of solutions, as in the case of other geophysical methods which yield data amenable to computation.

When working according to radioactive methods, it is usual to measure the rate of discharge of the measuring instrument, the electro-meter, after pumping soil gases from shallow holes into the instrument. Increased radioactive content of the soil gas is then sometimes ascribed to the presence of crude oil which is known to be an absorber or radioactive substance; it has been found, however, that the source of radioactivity is in most cases in the surface layers, and that radioactive highs cannot be correlated with oil bearing structures.

There is one method which is based on the presence of oil or coal deposits; soil gas samples are taken from shallow auger holes and are analyzed either in the field or in the laboratory for methane and heavier hydrocarbons. The presence of ethane or heavier hydrocarbon gases is assumed to be indicative of the presence of oil or coal occurrences.

Briefly, geophysical measurements yield the variations of some quantity, the magnetic field intensity, gravity, seismic velocity, time of propagation to a reflecting horizon, electrical transient, potential distribution, field intensity, radioactivity or heavy hydrocarbon content over an area; they yield no direct geological information, but they lead the geophysicist to postulate certain possible physical causes of the observed effects. However, the geological causes underlying the observed effects are not always understood by the geophysicist and are the subjects of intensive investigation. Certainly, the average geologist's training in the exact sciences is not such as would enable him to extrapolate authoritatively from the physical observations to the geological conditions.

Use of Geophysical Data

Let us be a little more specific with regard to the data furnished by the geophysicist to the interpreting geologist.

Torsion balance readings yield gradients and curvatures, and there is only one correct way to derive these from the torsion balance readings. If I understand the function of the interpreting geologist, his problem consists of using the gradients and curvature values, to compile a map which shows geologic structure. The usual way is to look askance at the gradient and curvature map and recommend leasing the area to which the tails of the gradient arrows point. If more intensive work seems desirable, the interpreter first rejects those gradients which point in the wrong direction and then finds the resultants of the vectors which were retained. Isogams are finally drawn. It seems obvious to me that

thus far in the interpretation of the data the geologist was needed only in the rejection operation which to most physicists would be exceedingly painful, because they have been trained to apply strict criteria in the rejection of pertinent data. After the isogams have been drawn, the remaining problem is the deducing of the geologic structure. Physicists and mathematicians have computed gradient and curvature profiles across certain theoretical structures, such as faults, buried spheres and cylinders, anticlines and synclines. The interpreter compares his profiles with these models and often derives important clues; he may learn, for example, that a gravity minimum in the Gulf Coast indicates the presence of a salt dome. Remember now, that we have no more than we had before, namely a gradient and curvature map and an isogam map; the salt dome supposition came from experience which was based on drilling. Many of you have probably tried these long years to forget the consternation which was caused when gravity minima were first observed in the Gulf Coast; they were, to say the least, "unorthodox," following a number of maxima which had almost established a position of exclusiveness. It does not seem preposterous to me to assume that physicists would also have become convinced of the geologic significance of gravity minima in the Gulf Coast after the drill had established what they came from, if they would not indeed have deduced their meaning by theoretical considerations in advance of drilling.

Seismic and Refraction Work

Passing now to seismic exploration and first to refraction shooting, we recall that travel-times were observed and later plotted to yield a travel-time curve. Velocities were read from this curve, and if they exceeded about 15,000 feet per second in the Gulf Coast it was assumed that salt was present. Of course, such velocities can be obtained by shooting updip in shale, thus simulating a salt dome where none is present; on the other hand, shooting downdip in salt may give a lower, or shale, velocity. It was the physicist who found this out, because he had a background in mathematics, and the geologist passed the tidings on. After a shot across Blue Ridge had indicated a high velocity, it became the vogue to lease, and to drill, high velocity areas, based on the assumption that the velocity of an elastic wave is higher in consolidated rocks than in the surrounding sediments; this, however, had been known before from measurements made in 1888 by Fouque and Levy in France and from earthquake seismology. It is difficult to discern any contributions of geologists. High-velocity areas were leased and drilled, not salt domes.

In reflection shooting, it is possible and customary to observe, not only the distance and the travel-time, but also the angles of emergence of the waves arriving at the receiving stations. The angles of emergence are related to the Δt's or "step-outs" on the record. Assuming a value for the depth of the reflecting layer and an average velocity, it is possible to calculate the drip from these assumed quantities, and from the travel-times and "step-outs." It should be remembered, however, that the relations used in the computations are usually derived on the assumption that only one layer is present, or that the velocity varies in an assumed manner with the depth; the calculated value of the dip is, therefore, not to be taken at face value, but it is probably closely related to the true dip. Depths are calculated from the assumed average velocity, the travel-time, and from the shot-point-receiver distance. Unless the average velocity was measured in a borehole in the area, the calculated depths are again only qualitative. When sand conditions like at Smackover are encountered, there must be two such borehole measurements, one on, and one off, the structure. Geophysicists sometimes wonder why the reflection travel-times must be converted into fictitious depths, especially in those areas where the recorded reflections penetrated several thousand feet deeper than the bottom of the deepest hole in the area, and it is consequently impossible to correlate the reflecting layers with geologic markers.

At this stage we wish to inquire again, what are the two geologists, the one in the field and his brother in the office, to do with these travel-times and "step-outs"? What can be done besides plotting calculated dips and depths on a map and contouring? This procedure is precisely the one which lead to the postulation of faulting by geophysicists in Gulf Coast areas at a time when the geologists were loath to recognize the existence of faults. Of course, this rigorous use of travel-times and "step-outs" in reflection shooting and the equally rigorous use of other geophysical data is where the rub comes in. The geologist does not like the geophysicists' contours; they exhibit sharp edges, scallops and other unorthodox frills. The geologist can take the geophysicist's contour map and re-contour it so as to make it look like the real thing. The difference resides in the fact that the geophysicist contours on the physical properties which are known to vary abruptly, while the geologist thinks that he is contouring on a geologic formation which he knows to be rather well smoothed out. To be more definite, if at a certain point the reflection time is two seconds and the "step-out" 0.030 seconds, what can you do about it? If the indicated dip and depth appear to be inconsistent with the dip and depth observed at a station half a mile away, what can you do about that? You can plot the calculated dips and depths or, better, the observed travel-times and "step-outs" and contour rigorously, remembering that a geophysicist's contours may cross! On the other hand, you can follow the customary procedure and use those points which look right while rejecting the others. Let me ask you, however, if you knew that much about the area, why did you shoot it?

Recommended Procedure

It appears to me that all users of geophysical methods ought to insist that:

1. Geophysical work be done carefully.
2. Data be as clear and definite as can be obtained by scientifically sound methods and apparatus.
3. Interpretations and calculations be made from the data alone and without the aid of geological information or data derived from other geophysical methods.
4. Data obtained by different methods be worked independently and interpretations plotted on different maps.
5. All geological information about the area covered be withheld from the field computers or other persons making original interpretations of geophysical data so that they can maintain an independent and unbiased point of view.
6. The maps prepared by the geophysicists be

finally submitted to the geological department for study; a competent geologist, who has a thorough understanding of the physical background, can combine geological and geophysical information in the preparation of a new map which may then be assumed to represent all that has been learned from the area in question at that time. However, if the new map differs radically and essentially from the geophysical map, it must be checked by the geophysicist to find out if any of the changes are incompatible with the data. Let the geophysicist interpret and leave hypothesizing to the geologist.

7. Under no circumstances may geological information ever be used to express features on a geophysical map which are not clearly and readily deducible from the geophysical data; each geophysical map must show what was computed and deduced from the data obtained by one, and only one, geophysical method.

On the organization of an affective exploration department, I refer you to the address of our past president, Dr. Weatherby, to the last annual meeting. This paper was published in Geophysics, June, 1936, pages 179-188.

Only by working as suggested is it possible to obtain independent geophysical information which can be combined afterward by competent geologists with what is known of the geology of the area. To furnish geophysicists with geological information, to permit geologists to influence geophysical computers and interpreters, to judge the merit of a geophysical investigation by the close agreement of depth values with borehole data which were made available in the course of the interpretation to the computers, is to assume that the geological knowledge of the area was complete before the geophysical work was done; but then there was no need for making geophysical measurements.

What Is Acceptable Picture?

The assumption, by the geological profession, that geophysics is only another geologic tool, has given rise to the requirement, by the geologists, that geophysics furnish an acceptable picture. Now let us further examine what this means. First we must have a definition of the word acceptable as here employed. It means, and I think all you will agree with me, a picture in conformance with geology as it is known at the time when the picture is made. Please let me inquire, does this requirement permit of the extension of geologic knowledge except by drilling? Second, is it reasonable to postulate in advance what the measurements of physical properties must yield? Third, must the data of physical measurements which in themselves are not under our control, be so distorted as to yield a picture in conformity with geologic knowledge even to the extent of rejecting, without proper reasons, some of the data, of placing undue importance on others, all in the interest of producing an acceptable picture? The literature abounds with references to cases where drilling changed what had hitherto been an acceptable picture; when the geologic conditions became known the previously acceptable picture was no longer acceptable and the new picture which had been violently rejected before in turn became acceptable. Moreover, this must be so, for geology is not a closed book; it grows as more data comes to hand. Why, then, is it so difficult to convince geologists that some of their most precious tenets or assumptions regarding the geology of any given area may, after all, not be based on proper and sufficient data?

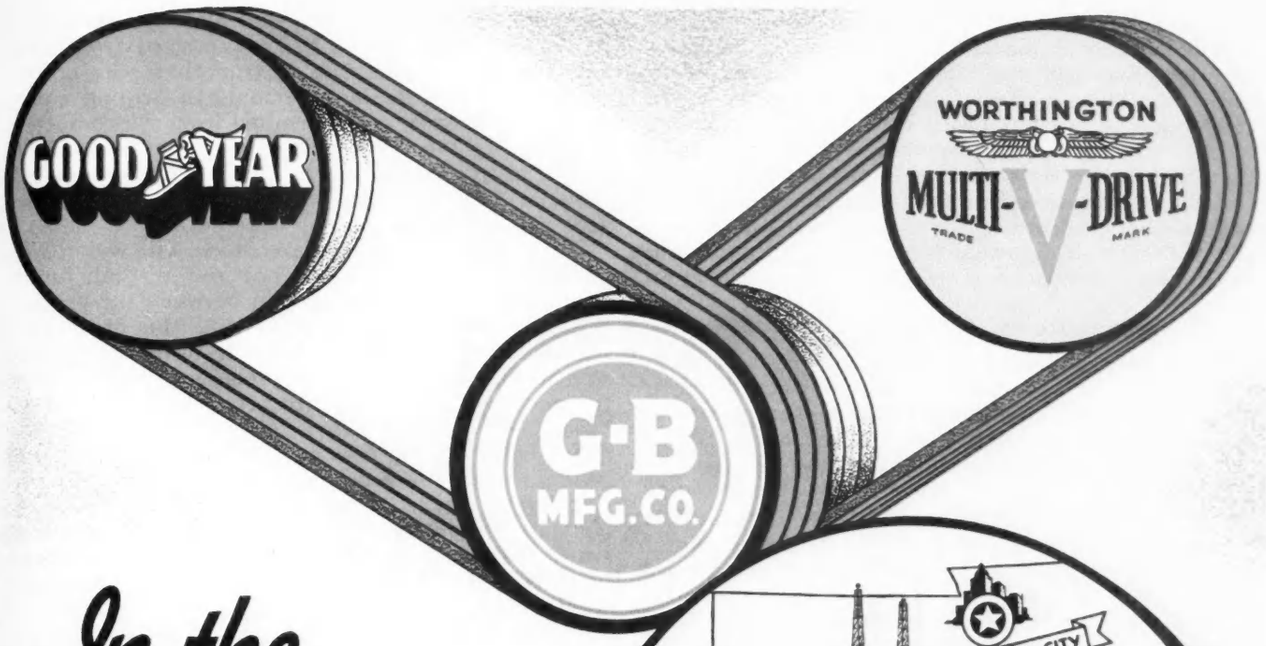
Do Not Correlate Geology and Geophysics

Let us forever drop the requirement that geophysics must furnish a geologically acceptable picture. Let the geophysicist make his measurements of physical properties, let him draw contour maps based on the spatial variations of those properties, but let us refrain from correlating these measurements with geologic conditions. Further, let us refrain from assuming that any apparent correlation in any one area proves the point to the extent that the same correlation must hold everywhere. It must be admitted that, not infrequently, geophysical methods do not yield geologic data per se.

Nor is it to be expected that the geophysical methods of the future, or those being developed at the present time, will yield such data as will be immediately amenable to the composition of geologically acceptable maps or pictures; and the requirements that the data of such methods be translatable into geologic language will retard, if not prohibit, progress in geophysical exploration. Each new method will be predicated for its success upon a new field procedure and the data will be different, requiring for their elucidation theoretical study (which in geophysics is always exceedingly difficult on account of the great variety of unknowns) and experience in practice. We are reminded of General Grant who, failing to appreciate the effect, on tactics, of the breach-loading rifle, persisted in the use of the mass assault, and of the generals of the World War who, having failed to study the Civil War, used the mass assault of Napoleon against machine guns with disastrous results to their troops. Analogously, we are inclined to use geophysical prospecting methods in attacking problems which are radically different from those which in other times and in other areas were solved successfully. More particularly, the refraction profiling attack of the years 1929 and 1930 in the Gulf Coast was futile; nor is it likely that the present mass assault by the reflection method in the same area will henceforth be in a greater degree economically successful. The methods remain the same, but the problems to be solved change. The success of refraction shooting in the search for shallow domes did not guarantee an equal measure of success in prospecting for deep domes; the location of deep domes is an entirely different problem. Reflection shooting solved this problem in those areas where relatively steep dips and sufficient relief were encountered.

Lately, in the search for faulted structures with smaller relief which may, or may not, overlie very deep domes, the problem has changed again. Strenuous efforts have been made to adapt reflection shooting to fault-finding, with indifferent success. A new approach is needed, the electric methods seem to constitute an adequate tool. I predict that in the Gulf Coast we shall soon concentrate on the location of hidden faults in the search for new oil fields. There are indications at this time that great depth penetration will not be required, and that the delineation of regional faults which reflecting shooting missed will point the way to a new area of oil finding.

In the search for structural anomalies the geologists who have been directing geophysical prospecting have forgotten to pay attention to the problem of finding stratigraphic accumulations. I refer you to



In the

Mid-Continent & Gulf Coast Fields

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the paper of the past president of the association which he read at the last annual meeting in Tulsa. The geophysicists were cognizant of this problem, although they received little encouragement. The conception of inventions in electrical methods and in soil gas analysis prospecting dates back more than five years. Important progress has been made, and the prediction seems warranted that geophysics will in the near future be able to find oil directly and will furnish dependable methods and apparatus for finding, and locating, stratigraphic occurrences.

Geophysics an Independent Branch

What then, is the proper place of geophysics? It is an independent branch of applied physics. It yields data which the intelligent geologist can use with telling advantage in his study of geology. It can give geologists important clues regarding geologic structure, and it can tell them where the geologic assumptions require modification.

Finally, what is the place of geology in exploration? In the geophysical-geological ecotone we are already able to discern the general drift with sufficient clearness to venture predictions. It begins to become apparent that our old friend, the much belittled surface geologist, surrendered to geophysics because he did not realize his proper function in the exploration activity with sufficient clarity to withstand the onslaught. Only a few weeks ago, in connection with a historical study pertinent to a much discussed patent suit, I had the opportunity to examine the 1922-26 geologic and lease maps of the old Marland Oil Company of Texas. It was breathtaking to see that a dozen or more of our recently discovered oil fields were outlined and adequately and expertly leased more than eleven years ago. It is the irony of fate that this, the most progressive oil company at the time, first introduced geophysics into the Gulf Coast for the express purpose of better delineating these prospects already under lease, and that geophysics in less than two years shot those future oil fields out from under the old Marland Company by condemning each and every one of them. Such geologists are needed today to work in advance of the geophysical methods. The most important function of the geologist in the exploration department of the future will be advance library reconnaissance, telling geophysicists where prospecting will most likely yield quick results, where from the macroscopic viewpoint sand conditions may be expected to be favorable. We are hopeful, of course, that this geologist, our guiding light, may remember, when on the verge of waxing dogmatic, that oil has been found in areas where geologists formerly did not permit its occurrence on account of the supposed lamentably poor sand conditions and the assumed absence of source of beds; we hope also that there may be no recurrence of the blunders of those first two years of seismic prospecting.

Production Geology Important

A few aggressive geologists have developed a new field which is destined to become important; I refer to production geology. The successes already achieved in some of our recently discovered fields, in Conroe, Tomball, Dickinson, in the face of the difficulties presented by the latter two fields, give promise of greater and greater accomplishments. Already we have seen a well completed in eighteen inches of sand. Drilling speeds have increased phenomenally, an East Texas well having been drilled in thirteen days. Oil is being produced from 9,000 and 10,000-foot sands. It is true that part of this progress is due to improvements in drilling equipment, but much of it has resulted from the competent direction by the field geologist who, broadmindedly and to his decided advantage, used paleontology and electrical logging in his work in addition to his own geologic knowledge.

The geophysical-geologic ecotone will widen with geophysics finally, in the not too distant future, occupying the exploration field between the primary geologic reconnaissance work and the drill. Thus the geologist will be first, and last, in the exploration and production program. It remains to inquire what the geophysicist is doing to prepare himself for his broadened activity. He is studying geology! The geophysical exploration companies are adding staff geologists, not to work with geophysical field parties, but in a true staff capacity. The colleges of the land are gradually insisting that geology students study more physics, chemistry and mathematics; it behooves the older members of the profession, whether they intend to assume the "first and last" positions outlined above or not makes little difference, to become better acquainted with the physical principles underlying the geophysical prospecting methods and with their mathematical elucidation, but above all, to learn to recognize the import of physical data and the criteria which must be applied in their rejection.

The geophysic-geological ecotone originated when the surface geological methods were no longer able to replenish the country's oil reserves. The training of the geologist definitely fits him to see indications on the surface, to postulate the probable presence of oil in a province, and in both capacities he easily excels the person not so trained, for example, the geophysicist. But the latter takes advantage of progress in the physical sciences and is enabled to see below the surface, not the geologic markers which the geologist wishes to observe, but significant variations in physical properties. This is the foundation on which geophysical prospecting is built and this has resulted in the broadening of the ecotone. Finally, however, in the drilling of geophysical prospects, the geologist again enters his own element. Here again he deals with those problems which his training has enabled him to solve. He drills into the Frio and the Vicksburg; his concern is the occurrence of Heterostegina and Marginulina fossils, and the correlation of geologic markers across the oil field and from one field to the next. He can give you the top of the Frio and tell you that it is 300 feet higher here than there, remarking also, perhaps, that reflection shooting made it 600 feet; he forgets the reflection shooting delineated a velocity discontinuity which may at times be more significant physically in the middle of a geologic formation than on top of it or on the bottom.

Let us hope that, in the future, geophysicists receive further sympathetic cooperation from geologists and that the geophysicists, in turn, may remember that they, also, have made mistakes. Let us hope, finally, that after the settlement of the controversy between the American Association of Petroleum Geologists and the Society of Petroleum Geophysicists the two bodies may, in their new bond by affiliation, work together harmoniously for the advancement of the two sciences, exploration geophysics and petroleum geology.

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A Trip to Anahuac

ONE OF THE MOST SCIENTIFICALLY OPERATED FIELDS IN GULF COAST

By CHARLES LEYENDECKER, Staff Writer

PART 2

Historical and Structural Geology

Largest in area of any salt dome field in the Gulf Coast, and among the leading producing and crude oil reserve areas, the Anahuac field is of economic interest. Enhancing the importance are the modern scientific operating methods being employed. The accompanying discussion is the second part of a series. Other installments will appear in early issues.

ANAHUAC dome is undoubtedly the result of a deep-seated salt intrusion resulting from an original movement in early Oligocene and supplemented by later movements continuing until late Pleistocene. Anahuac dome has a very positive surface expression as was described under the subheading "Topography." Anahuac is an uplift of sediments, since deposition of the surface. The uplift at Anahuac covers an approximate area of 5500 acres, 3000-acres which are productive and about 2550 acres which will probably be proven with future drilling.

The uplift covers the north quarter of Section 59, all but the extreme northeastern portion of Section 50, the south portion of Sections 44, 47 and 48, all Sections 51 and 58, the north 200 acres of Section 63, the northeast quarter of Section 64, the east half and the northwest quarter of Section 57, portions of the east half of Section 56, all Section 52, the northeast portion of Section 53, the 500-acres of Sun Oil Company R. M. White lease, the south 400 acres of the east half of the Humble Oil & Refining Company

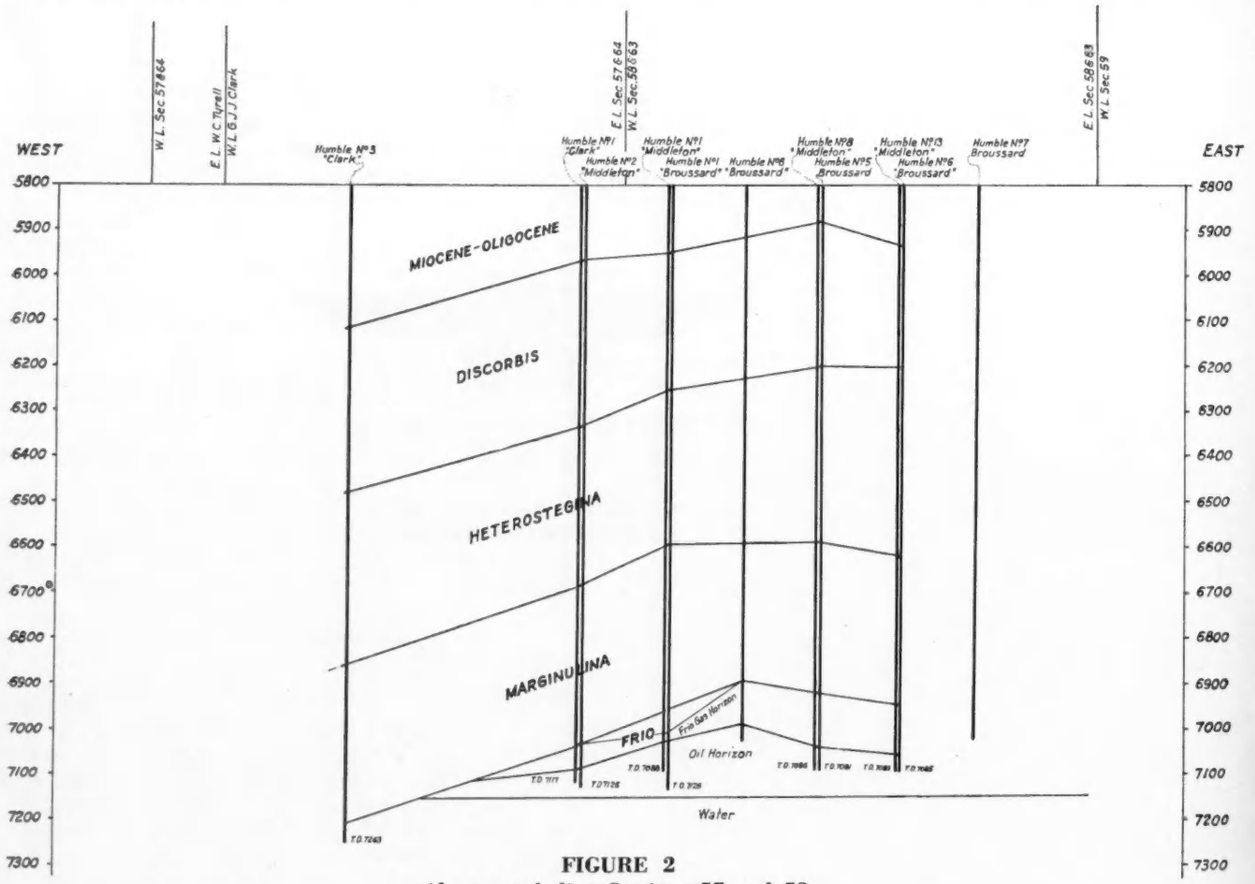

FIGURE 2
Along south line Sections 57 and 58.

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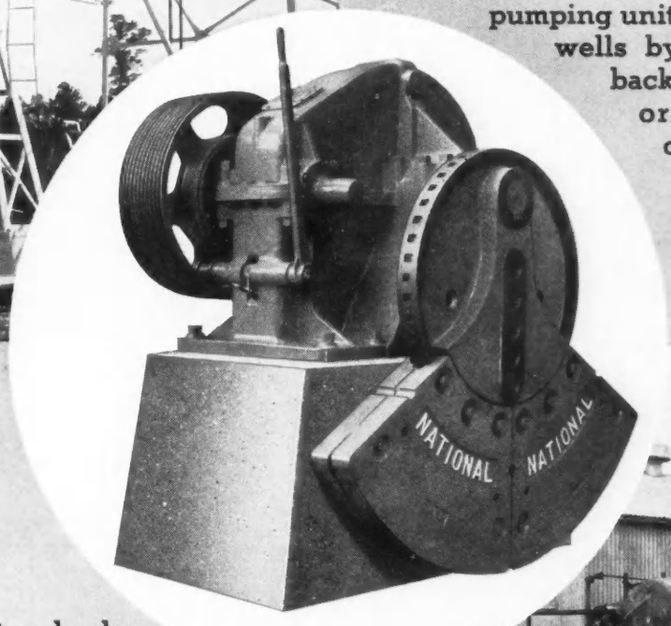

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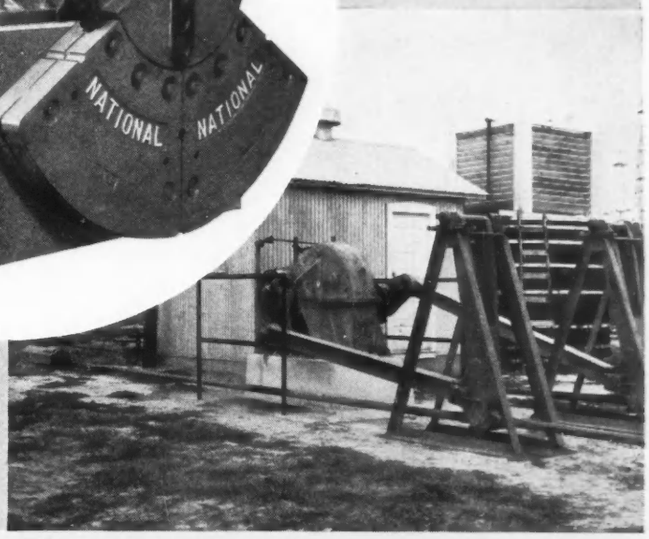

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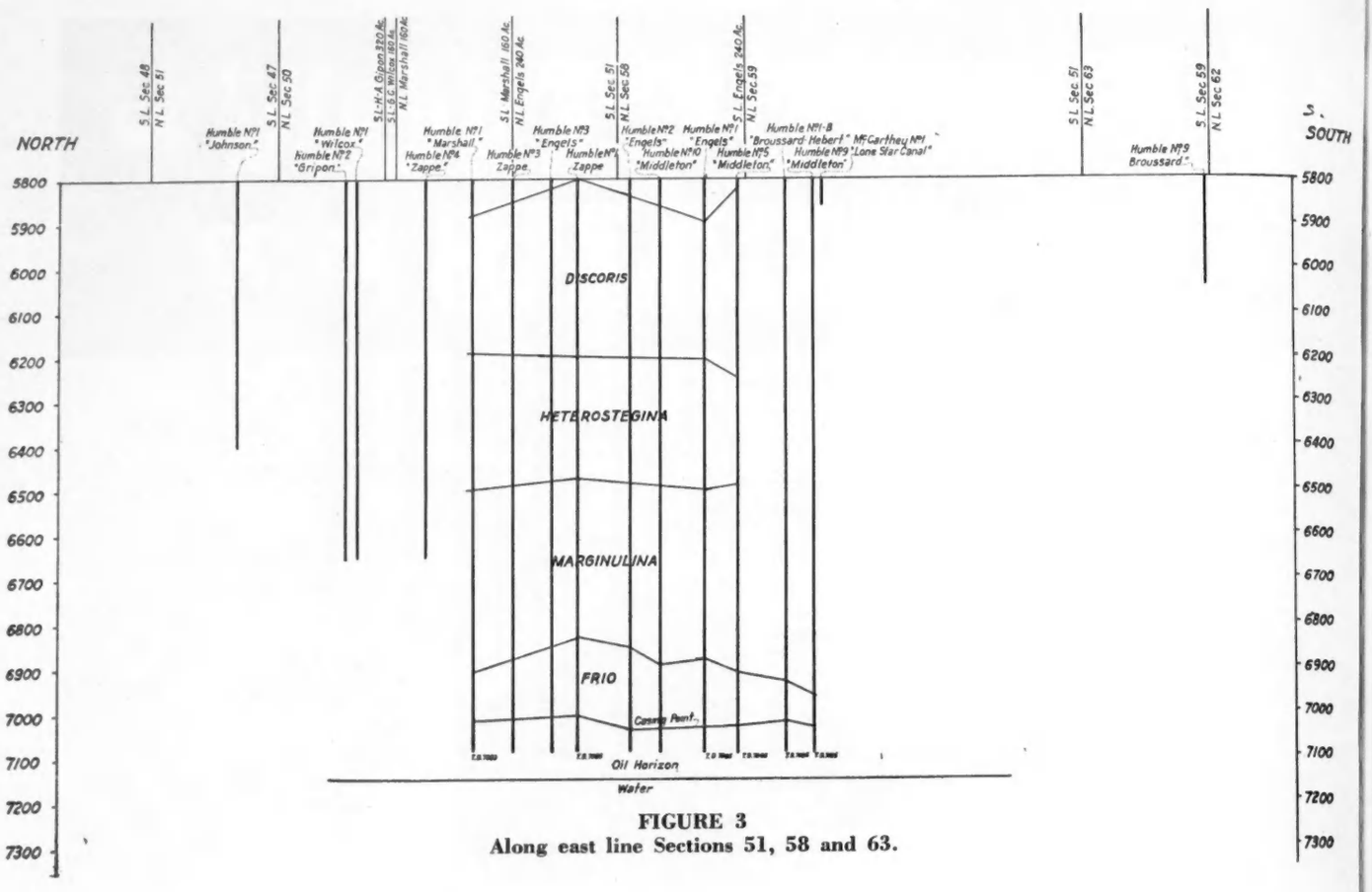

FIGURE 3
Along east line Sections 51, 58 and 63.

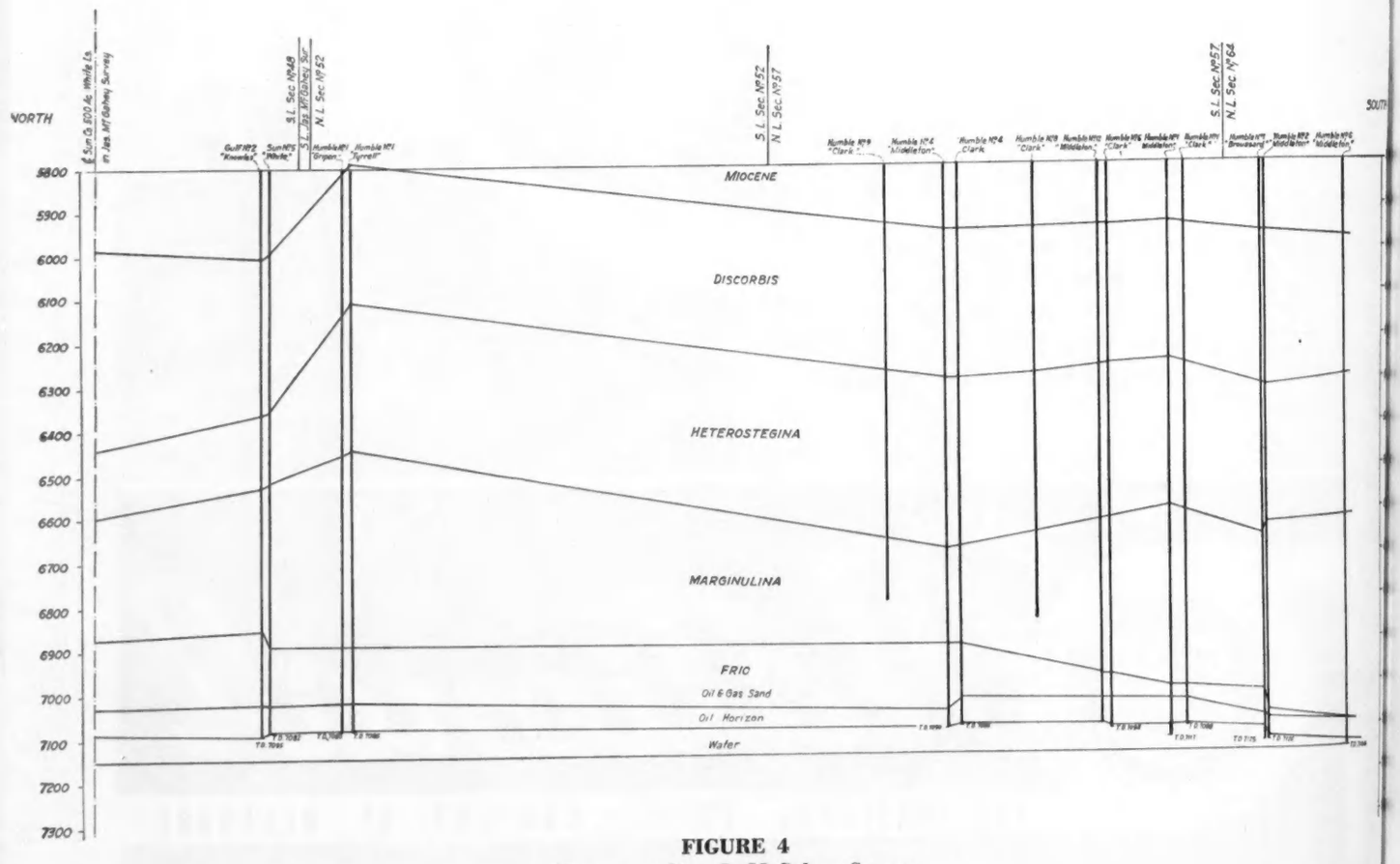

FIGURE 4
Along east line J. McGahey Survey.

R. A. Mason lease and the southeast 300 acres of the west half of the R. A. Mason 464-acres in the J. McGahey Survey.

Geological Opinion Differs

The writer does not intend to interpret the structural geology of Anahuac as there are too many logical opinions. Some leading geologists have different opinions as to faulting, while others believe erosion has taken place. But along with this article there is a contour may (Figure 1, THE OIL WEEKLY, March 22) showing the faults as interpreted by several leading geologists. The opinion of leading geologists who believe erosion has taken place will also be given. Each opinion is logical and the reader may choose for himself his own interpretation.

The uplift is not expressed in the silty, calcareous, deltic unstratified Lagarto clays, and only in isolated gas shows in the cross bedded and lenticular Oakville sands. In the irregular bedded and tuffaceous Catahoula, which is a series of continental sands, clays and pyroclastics, interbedded with fluviatile sediments, there is no evidence of stratification folding or uplift, nor faulting.

Several drawings accompanying this article (Figures 2, 3, 4, 5, 6, 7, 8 and 9) show cross sections in various parts of the Anahuac field.

Geophysical interpretations all show a strong dip to the north, toward the R. A. Mason's White lease, and a fault of large displacement between the south and north areas, with smaller faults between the south line of Section 57, the location of the discovery well, and the center of the Section 63. These alleged faults are, in the opinion of some leading geologists, only structural features produced by intermediate erosion. Subsurface detail, together with certain geophysical interpretations, has definitely confirmed this belief, according to the geologists.

In as much as the upper beds at Anahuac lack stratification for 6000 feet, the reflection seismograph instruments can only record the altitude of the lime beds, and cannot measure the individual depth of each bed, nor detect and differentiate the thickening and thinning due to ancient erosion of deposition, it is said. The Anahuac field is first reflected in the Discorbis horizon of the middle Oligocene, which is a minimum of 300 feet and a maximum of 556 feet or an average of 400 feet in thickness.

The structure is perfectly reflected in the Heterostegina zone with its minimum of 240 feet and its maximum of 400 feet and its average of 350 feet in thickness; and in the Marginulina formation with its minimum of 227 feet, its maximum of 635 feet and its average of 400 feet thick. These zones of the middle Oligocene are parallel or conformable and overlie the Frio producing horizon conformably.

The crest of the Anahuac fold extends from the southwest corner of Section 50, northwest through Section 51, through Gulf Oil Corporation's Knowles 2 in Section 48 between Sun Oil Company's 2 and Humble Oil & Refining Company and R. A. Mason's White 2, intersecting the west line of Humble Oil & Refining Company and R. A. Mason's White lease north of Humble Oil & Refining Company and R. A. Mason's White 6, and intersects the middle of the north line of the west half of the R. M. White lease. This axis then is gradually merged into the regional structural contours to the northwest.

From this axis the marine Oligocene and the Frio dip southeast on the south; northeast on the east

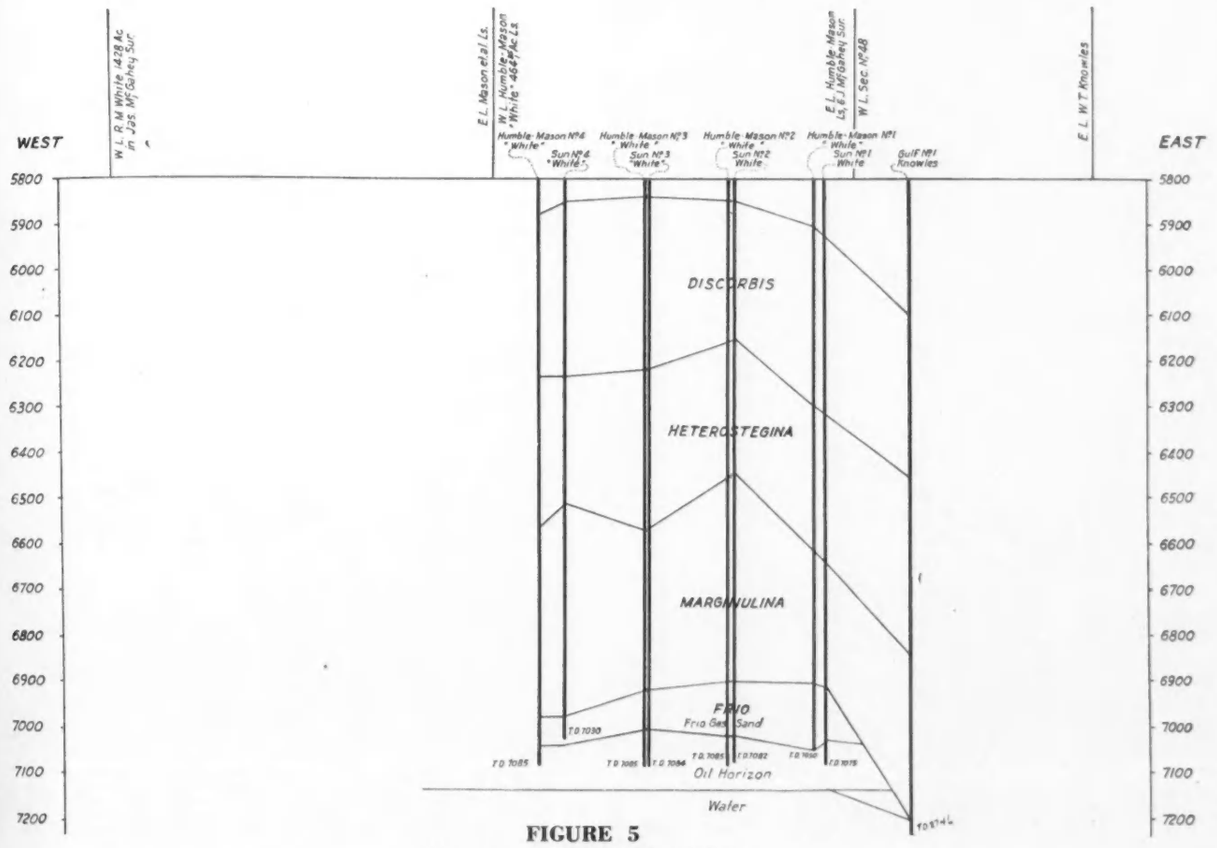

FIGURE 5
Along south line of Mason lease.

side; southwest on the west side and north on its north end.

This axis is indicated by the erosional low in the limestones between Humble Oil & Refining Company's Engles 1 and Engles 2 in Section 50; it passes through Humble's Zappe 1 in the southeast corner of Section 51 where the Frio is 27 feet higher than in Middleton 10 (See Figure 3); through Knowles 2 in the southwest corner of Section 48 where the Frio is up 34 feet from its offset, Sun Oil Company's White 5, only 150 feet west (See Figure 4); between Sun Oil Company's White 2 on the north line of the Sun Oil Company's White 500-acre tract and Humble Oil & Refining Company's R. M. White 2, where it has a gentle northwest dip of 36 feet; between Humble Oil & Refining Company and R. A. Mason's White 2 and 3, and extends practically level northwest; north of White 6 on the west line of the R. A. Mason's 464-acre lease.

In the wells around the school acre for which $45,000 was paid, the axis is indicated in a sharp dip between Humble Oil & Refining Company's Tyrell 1, Sun Oil Company's White 5 and Gulf Oil Corporation's Knowles 2 where the Discorbis dips 200 feet plus; from Knowles 2 the Discorbis comes up 50 feet to Sun Oil Company's White 1 and continues 60 feet up to Humble Oil & Refining Company's White 1. This sharp trough or graben indicating the axis is also expressed in the top of the Heterostegina and in the top of the Marginulina formations. Under this erosion syncline, the Frio reaches a maximum of 6856 feet in Knowles 2 and 6880 feet in Sun Oil Company's White 5. This sharp dip in the Marine Oligocene horizons can only express intermediate erosion on the axis during the uplifts following Frio folding, and is undoubtedly what the various geologists term as faults (See Figure 4).

An axis projected southeast cuts Humble Oil & Refining Company's Zappe 1, passes between Middleton 10 and Engles 2, and between Engles 1 and 6 (all which have Frio sands above 6900 feet). From the south line of Section 50, the axis dips south as is seen in the 7002-foot Frio level of Broussard and Hebert 2 (See Figure 9).

The north and south section on the west lines of Section 50 and 59 shows a sharp dip in the limestones between Engles 1 and 2, and between Engles 2 and Zappe 1, which confirms the axial projection from the northwest.

To the east the Anahuac dome dips sharply as exemplified by the dip of the beds between Humble Oil & Refining Company and R. A. Mason's White 1 and Gulf Oil Corporation's Knowles 1. Many geologists find this condition a very convenient "fault." In a distance of 1200 feet the depth of the beds follow:

WELL	Top Discorbis	Thick	Top Heterostegina	Thick	Top Marginulina	Thick	Total	Top Frio
Humble, White 1.....	5890	610	6301	109	6605	317	1036	6926
Gulf, Knowles 1...	6099	431	6530	320	6850	354	1105	7204
	209 ft.	...	229 ft.	...	245 ft.	...	....	278 ft.
Approximately.	11½°	...	13°	...	14°	...	....	15°

The dip between Humble Oil & Refining Company and R. A. Mason's White 1 and Gulf Oil Cor-

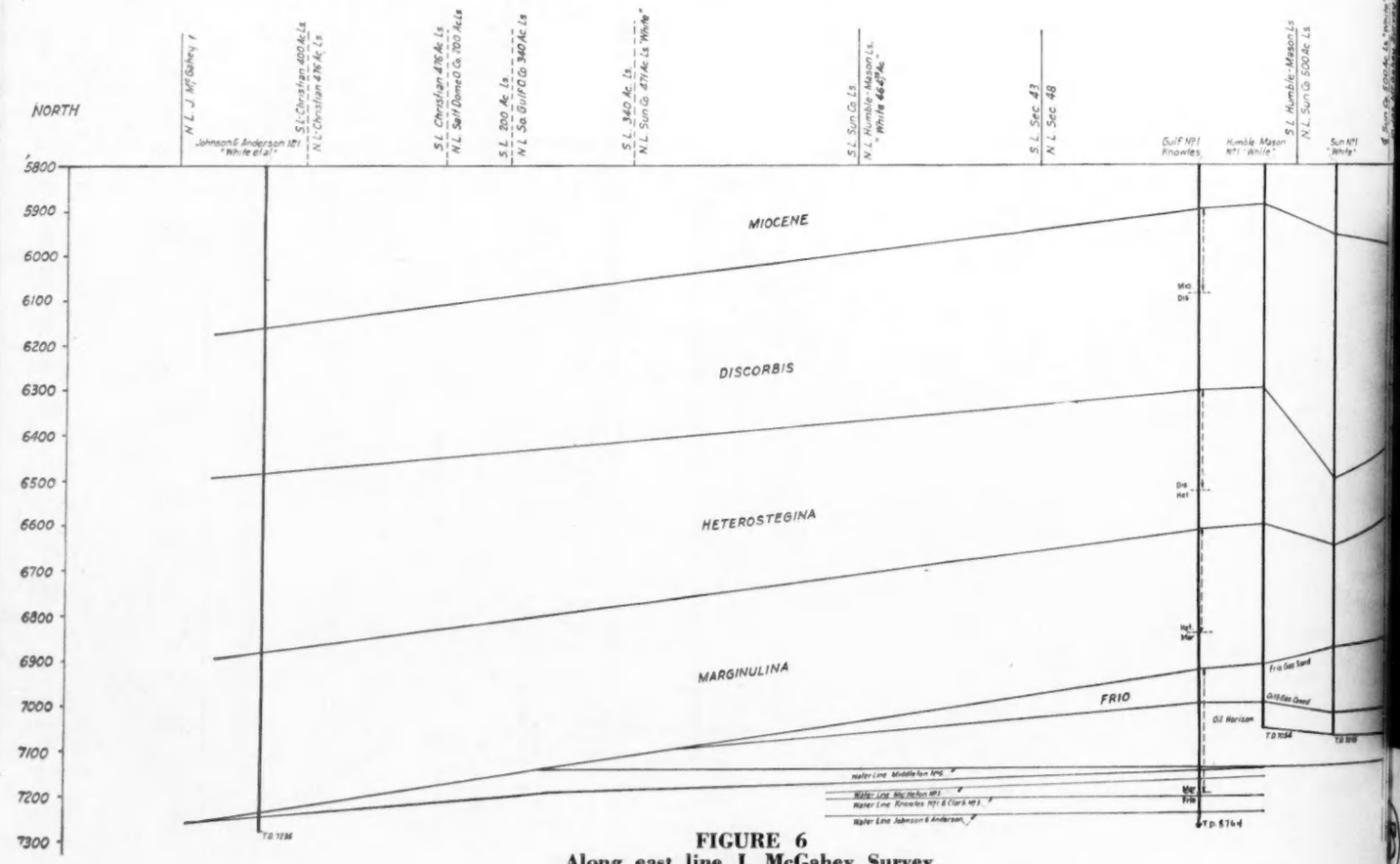

FIGURE 6
Along east line J. McGahey Survey.

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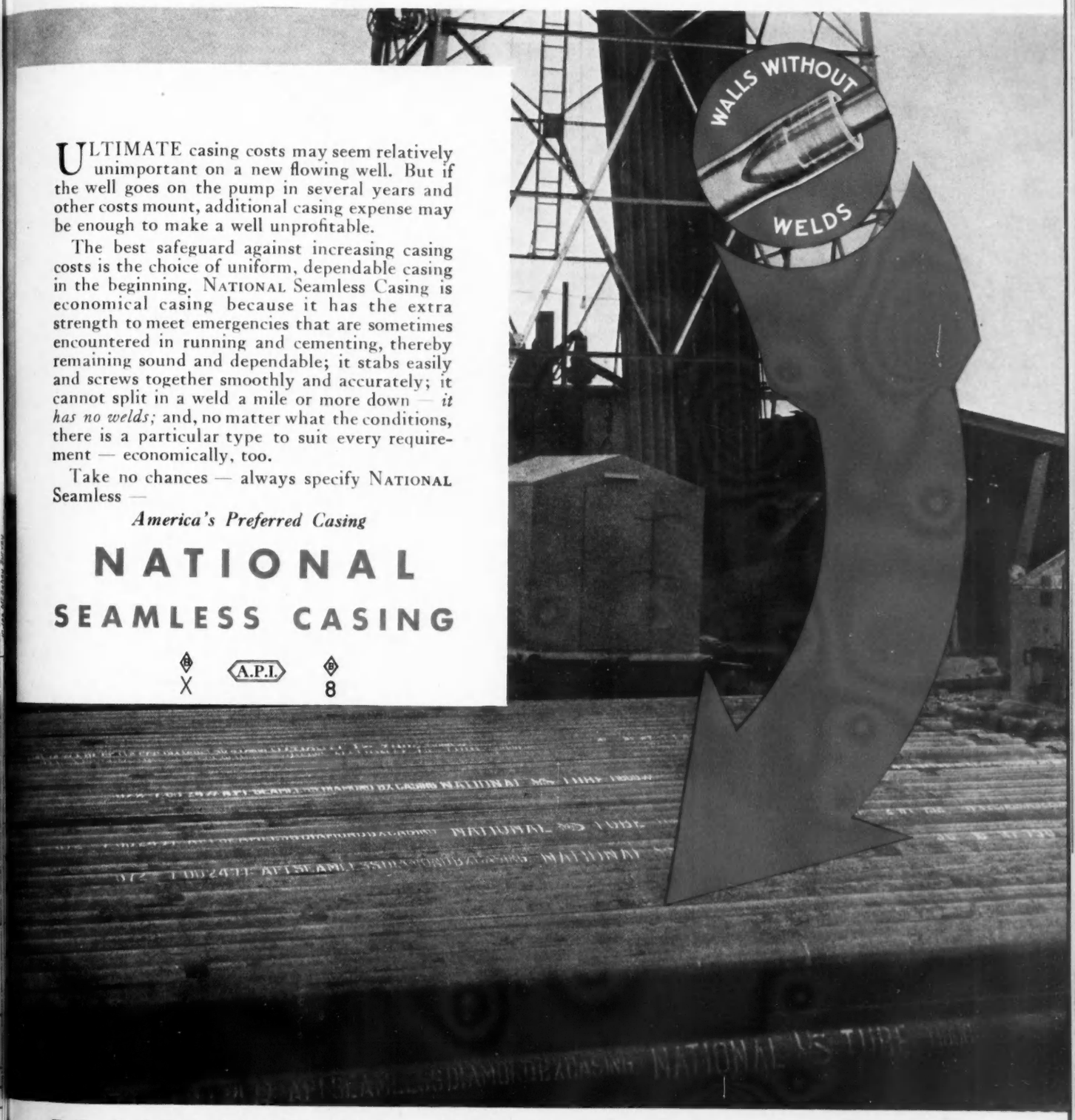

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poration's Knowles 1 is relatively steep, but shows no evidence of displacement and it is believed by geologists that these low dips are not and do not justify the term "fault," but are structural dips and are not excessive for this type of fold (See Figure 5).

On the southeast the dip is from Humble Oil & Refining Company's Clark 4 where the Frio was topped at 6900 feet to Broussard 3, where the Frio was topped at 7028 feet, a drop of 128 feet in 4750 feet, or approximately 1½°.

A southwest section from Humble Oil & Refining Company's Middleton 3 to Middleton 6 shows a Frio drop of 244 feet in a distance of 5320 feet, or approximately 2½°.

The southwest dip is shown by the section from Humble Oil & Refining Company's Tyrell 1 to Middleton 1-B, a distance of 9100 feet, where the Frio drops 200 feet, or approximately 1½°.

The Erosion Theory

Geologists holding to erosion theories believe these dips record the axis (expressed very definitely south and east), and that this eroded axis is the evidence of ancient erosional activities on the weak points of the beds, and that the north side of the Anahuac field will close against the normal regional dip, as it does on the west and south sides.

An interesting comparison is noted between Humble Oil & Refining Company's White 1 and Johnson & Anderson's White, due north 11,110 feet. Between these two wells the Discorbis drops 270 feet, the Heterostegina 289 feet, the Marginulina 241 feet and the Frio 310 feet, an average dip in the limestone of 1¼°; and 1½° in the Frio sands (See Figure 6). This gentle dip, in general conforming to the south and west dips, causes several geologists to conclude that this is the normal reversal, despite geophysical assertions to the contrary.

The history of the Anahuac field, as indicated by erosion of the middle Oligocene limestones, can only be interpreted as the major Diastrophism accompanied by a deep Saline intrusion in early Oligocene, at or about the close of Frio. The Frio was uplifted approximately 350 feet and was relatively quickly depressed without suffering erosion. Deposition of Marginulina followed, building to a height of approximately 400 feet.

A second Diastrophism uplifed the Marginulina, leaving its surface exposed for a relatively long period. In this period the Epigene was most active, especially on the weak points or crest of the axis, for erosion cut into the beds over a hundred feet. During this uplift period the Foraminifera were eliminated completely.

A third depression with deposition of the Heterostegina zone to a depth of approximately 350 feet filling in the erosional channels of the Marginulina, followed by uplift and exposure to erosion. Erosional forces were more active or the period of uplift was of a greater duration than the Marginulina epoch, as is evidenced by the Heterostegina bed being cut to a maximum of 250 feet on the crest of the fold. During this uplift the Foraminifera disappeared.

Again the Gulf of Mexico resumed its play, depressing the area for Discorbis deposition to a depth of 350 feet and filling in the deep erosional gulleys of the Heterostegina along the axis.

Another uplift followed the subsequent crestal erosion of the, now exposed, Discorbis to an average

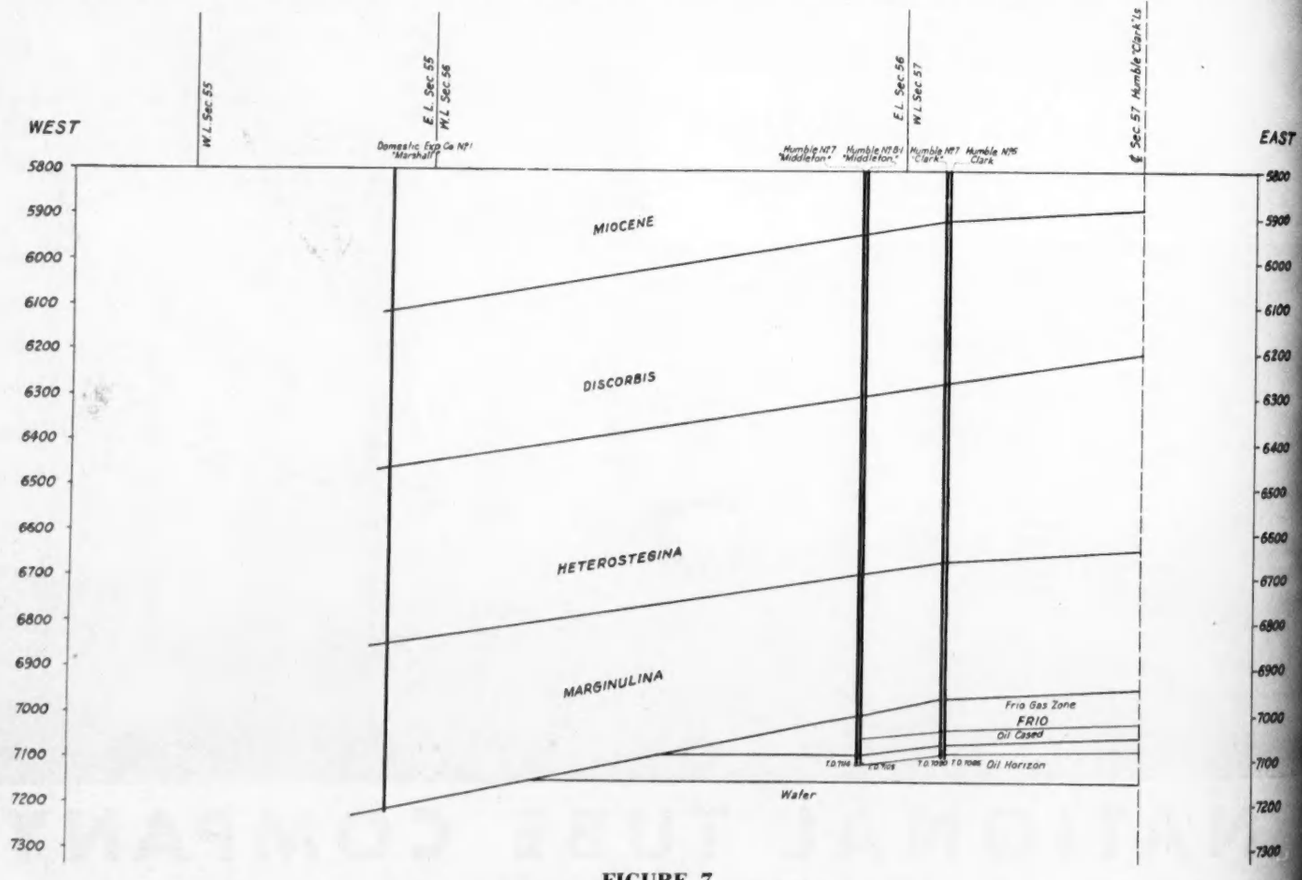
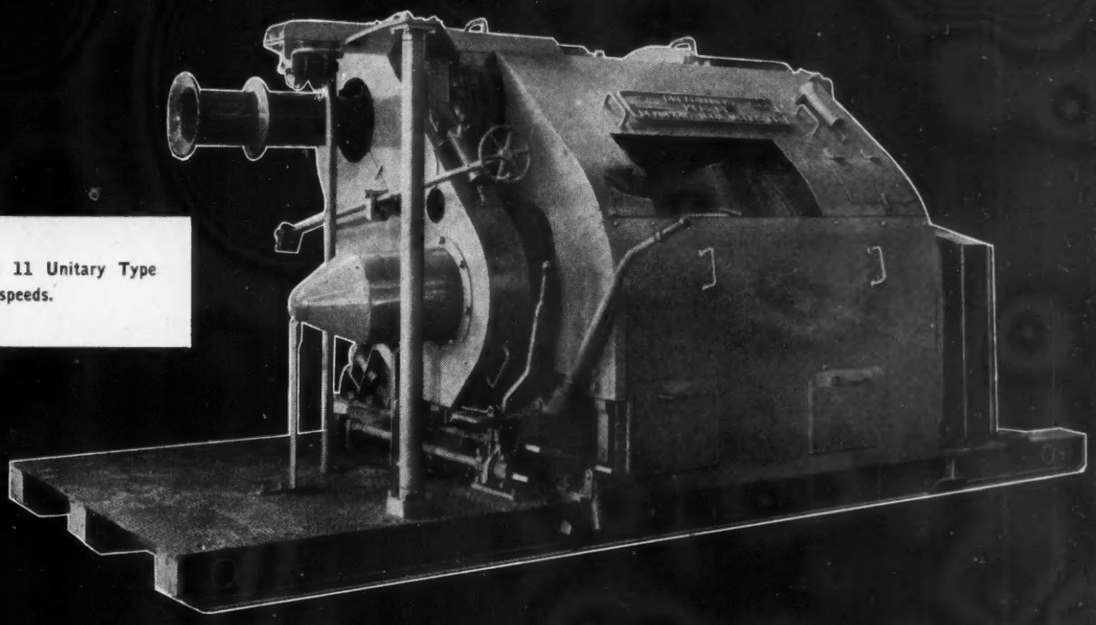


FIGURE 7
From center of Section 57 through Sections 56 and 55.

A trio of DREADNAUGHTS that can't be beat!



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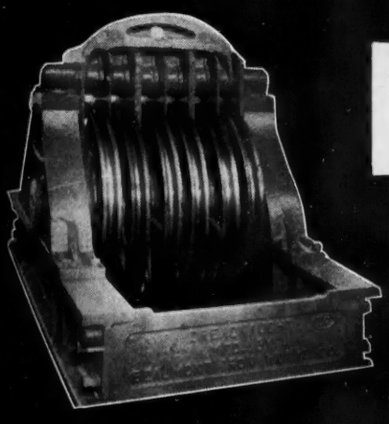

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TABLE 4

Wells at Anahuac Field Which Determined the Salt Water Level

WELL	Section	Top Frio	Salt Water	Remarks
Humble, Middleton 3	58	6880	7172	plugged back
Humble, Middleton 6	64	7124	7144	perforated
Humble, Clark 3	57	7212	7212	abn.
Domestic, Marshall 1	55	7201	7201	abn.
Gulf, Knowles 1	48	7204	7204	abn.
Johnson & Anderson, White 1	McGahey	7204	7204	abn.
Woodley, Blanke 1	41	7248	7248	abn.

depth of 200 feet, a land era which made Foraminifera of the Discorbis.

The Catahoula, the Oakville, the Lagarto, the Goliad, the Lissie and the Beaumont followed, as the Gulf waters used its embayment in successive advances and retreats from approximately its present location to the Paleozoics and Northern Arkansas. The mechanical necessity of these repeated uplifts and subsidences is folding and intrusives, volcanics and more folding; and, in areas of stress, faulting.

In the Anahuac area, the only surface indication of the great activity of introtelluric forces, so well expressed below 5800 feet, is the feeble topographic mound described under "Topography." However, completed subsurface detail confirms the history of this deep-seated salt intrusion, uplifting the competent beds of the superimposed limestone sediments, but showing little if any uplift in the incompetent Catahoula to Beaumont section.

Anahuac dome is the result of a deep-seated salt intrusion. It is in the class of Sugarland, Rabbs Ridge, Esperson, Conroe, Hastings and other fields, whose closures rarely exceed 500 feet but where the sediments are domed without piercement of excessive faulting. Shallow domes or piercement domes have closures of 1500 to 3000 feet, but the intrusion is always accomplished by a piercement and accompanied by severe fractures of the sediments.

Origin of Petroleum and Gas

The origin of petroleum and gas in the Anahuac field is in the underlying 15,000 to 18,000 feet of sediments covering a wide area, especially the shales containing organic debris, and is the result of biochemical and geo-chemical processes acting on this organic debris. The sources of the oil has absolutely no genetic connection with salt. In migration of major effect is structure to provide lateral movement toward the crest.

The commercial occurrence of oil and gas in the Anahuac district is necessarily confined to the relatively small area of the domal uplift, which has acted as an accumulating foci in its relatively coarse grained, porous Frio sands, covered by its 1000 feet thick impervious limestones. Localization of accumulation is due to simple anticlinal accumulation of sands.

The anticlinal or gravitational theory is based on the arrangement of gas, oil and water according to their respective densities. Thus, if a porous formation is saturated with water, and oil and gas are introduced, the gas followed by the oil will rise to the high points of reservoir, moving upward until motion is arrested by an impervious strata. The surface tension of water is some three times the surface tension of oil, therefore the resultant capil-

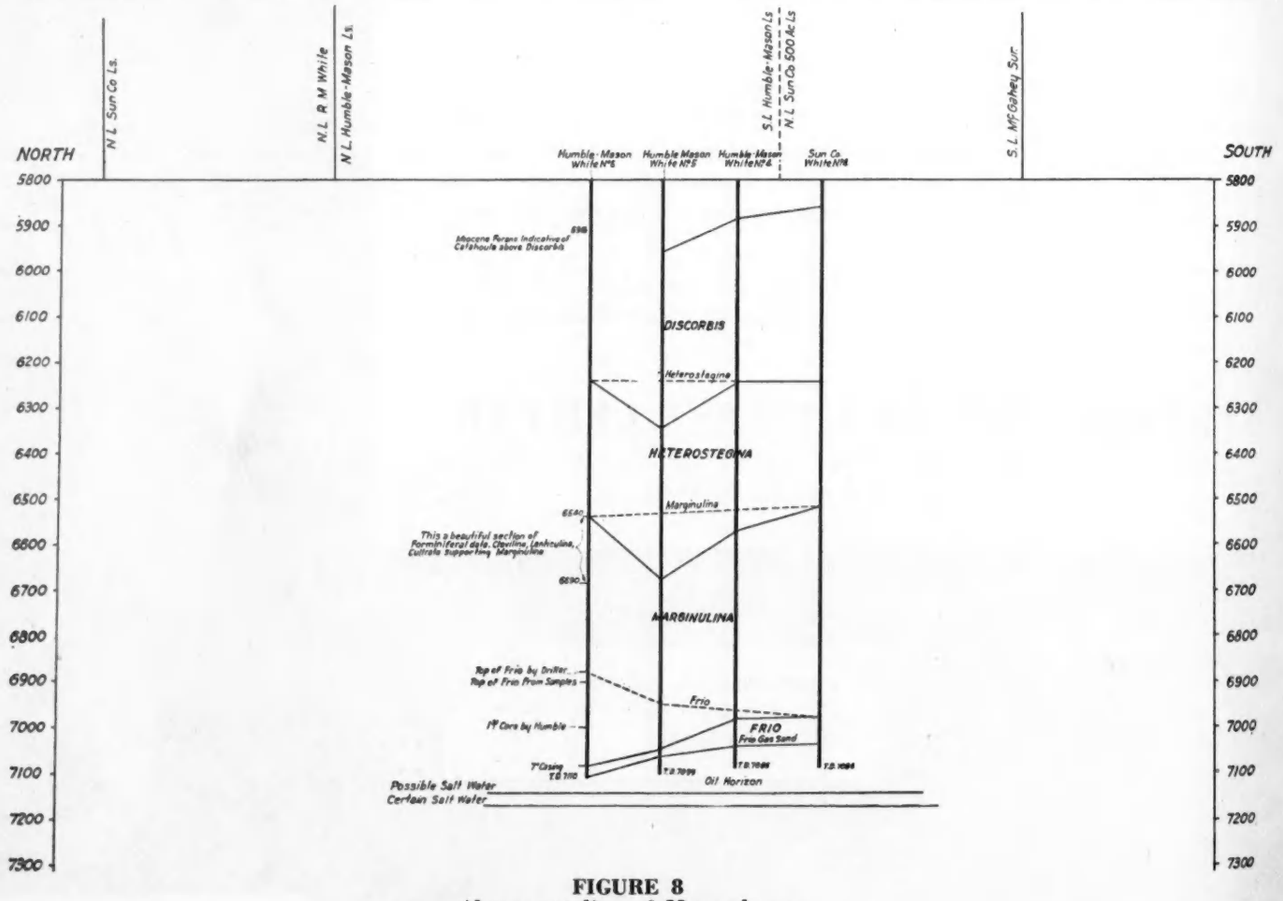

FIGURE 8
Along west line of Mason lease.

TABLE 5

Well Statistics Showing Frio from 6830 to 7248 Feet

WELL	Section	Top Disc.	Section Disc.	Top Het.	Section Het.	Top Marg.	Section Marg.	Total	Top Frio	Casing Point	Gas Sand Cased	Water Line	Feet of Oil Pay Sand	Total Feet of Frio Above Water
Sun, White 5	McGahey	5809	412	6221	119	6340	490	1021	6830	7″/7030′	185	7144	129	314
Humble, Zappe 1	51	5800	400	6200	275	6475	360	1035	6835	7″/7040′	169	7144	140	309
Sun, White 1	McGahey	5905	556	6461	149	6610	227	932	6837	7″/7030′	136	7144	171	307
Humble, Engels 2	50	5895	308	6203	297	6500	350	955	6850	7″/7041′	191	7144	103	294
Humble, Engels 6	50	5820	425	6245	245	6490	360	1030	6850	7″/7009′	170	7144	124	294
6850-6875														
Gulf, Knowles 2	48	5870	331	6201	279	6480	376	986	6856	7″/7054′	198	7144	90	288
Sun, White 6	McGahey	5681	397	6078	177	6255	615	1189	6870	7″/7048′	145	7144	129	274
Humble, Middleton 5	58	5785	430	6215	240	6455	418	1088	6873	7″/7037′	167	7144	104	271
Humble, Middleton 13	58	5951	310	6261	301	6562	313	924	6875	7″/7083′	105	7144	164	269
6875-6900														
Humble, Middleton 3	58	5810	376	6186	304	6490	390	1070	6880	7″/7076′	185	7144	79	264
Humble, Engels 1	50	5898	303	6201	300	6501	382	985	6883	7″/7040′	150	7144	101	251
Humble, Tyrell 1	52	5778	333	6111	364	6475	415	1112	6990	7″/7025′	135	7144	119	254
Humble, Gripon 1	51	5805	320	6125	360	6485	405	1085	6890	7″/7040′	152	7144	102	254
Humble, Mason-White 2	McGahey	5848	310	6158	320	6478	414	1044	6892	7″/7026′	133	7144	119	252
Humble, Middleton 10	58	5877	330	6207	290	6497	400	1020	6897	7″/7033′	136	7144	111	247
6900-6925														
Humble, Engels 7	50	5897	364	6261	279	6540	360	1003	6900	7″/7040′	135	7144	109	244
Humble-Mason, White 6	McGahey	5950	300	6250	300	6550	350	950	6900	7″/7081′	174	7144	74	244
Humble, Clark 4	57	5852	350	6202	396	6598	302	1048	6900	7″/7025′	125	7144	119	244
Humble, Hebert-Broussard 1-B	59	5820	420	6240	247	6487	415	1082	6902	7″/7020′	118	7144	124	242
Humble, Middleton 8	58	5885	302	6187	398	6585	320	1020	6905	7″/7039′	134	7144	105	239
Humble, Marshall 1	52	5900	305	6205	302	6507	403	1010	6910	7″/7040′	132	7144	102	234
Sun, White 2	McGahey	5860	295	6155	300	6455	456	1051	6911	7″/7040′	117	7144	116	233
Humble, Middleton 12	58	5941	330	6271	345	6611	305	980	6921	7″/7035′	121	7144	102	223
6925-6950														
Humble-Mason, White 1	McGahey	5890	610	6500	109	6609	317	1036	6926	7″/7003′	77	7144	141	218
Humble, Broussard 6	63	5919	268	6187	423	6610	325	1016	6935	7″/7040′	117	7144	92	209
Sun, White 3	McGahey	5840	372	6212	328	6540	396	1096	6936	7″/7032′	96	7144	112	208
Humble, Middleton 4	58	5950	345	6295	385	6680	260	990	6940	7″/7040′	89	7144	114	203
Humble, Broussard 5	63	5882	307	6189	389	6578	363	1059	6941	7″/7030′	89	7144	114	203
Humble-Mason, White 5	McGahey	6015	360	6375	299	6674	276	935	6950	7″/7040′	102	7144	92	194
6950-6975														
Humble, Broussard 1-B	59	6079	302	6381	211	6519	367	880	6959	7″/7040′	83	7144	102	185
Humble, Middleton 9	58	5907	380	6287	275	6562	402	1057	6964	7″/7040′	78	7144	102	180
Humble, Clark 6	57	5935	320	6255	355	6610	360	1035	6970	7″/7070′	100	7144	74	174
6975-7000														
Humble-Mason, White 4	McGahey	5892	35	6243	335	6578	405	1091	6983	7″/7040′	57	7144	104	161
Sun, White 4	McGahey	5857	385	6242	275	6517	466	1126	6983	7″/7035′	52	7144	109	161
Humble-Mason, White 3	McGahey	5875	365	6237	394	6631	354	1113	6985	7″/7077′	47	7144	112	159
Humble, Middleton 1	58	5990	310	6300	335	6635	364	1009	6999	7″/7036′	28	7144	117	145
7000-7025														
Humble, Hebert-Broussard 2-B	59	....	...	....	...	....	...	....	7002	7″/7042′	40	7144	102	142
Humble, Broussard 1	63	5962	358	6320	336	6656	362	1056	7018	7″/7070′	53	7144	73	126
7025-7050														
Humble, Broussard 3	63	6103	362	6465	355	6820	208	925	7028	7″/7030′	10	7144	106	116
Humble, Clark 1	57	5956	365	6321	341	6662	368	1074	7030	7″/7079′	45	7144	69	114
Humble, Clark 2	57	5950	320	6270	340	6610	428	1088	7038	7″/7071′	43	7144	63	106
Humble, Clark 5	57	5961	360	6321	325	6646	395	1080	7041	7″/7040′	None	7144	103	103
7050-7075														
Humble, Middleton 2	64	5965	360	6325	305	6630	430	1095	7060	7″/7076′	50	7144	34	84
Humble, Clark 7	57	5984	350	6334	335	6669	400	1085	7069	7″/7064′	None	7144	66	66
7075-7100														
Humble, Middleton 1-B	56	6253	97	6350	387	6737	353	837	7090	7″/7085′	None	7144	54	54
Humble, Middleton 7	56	6200	100	6300	400	6700	394	894	7094	7″/7094′	None	7144	54	54
7100-7125														
Humble, Middleton 6	64	5996	328	6324	375	6699	425	1128	7124	7″/7144′	None	7144	20	20
7125—WATER														
Domestic Marshall 1	55	6276	350	6626	267	6893	308	925	7201	None	None-SW	7201	Top of Frio Deep	...
Gulf, Knowles 1	48	6099	431	6530	320	6850	354	1105	7204	None	None-SW	7204	Top of Frio Deep	...
Johnson & Anderson, White 1	McGahey	6126	330	6456	400	6856	350	1080	7206	.....	None	7206	...	...
Humble, Clark 3	57	6124	363	6487	375	6862	350	1088	7212	None	None-SW	7212	Top Oil Sand	...
Woodley, Blanke 1	..	6260	360	6620	315	6935	313	988	7248	.....	None	7248	Deep ...	...

lary action tends to force water into the small openings or pores of the sand with consequent displacement of oil and gas into the larger openings or pores.

At Anahuac the drainage area is estimated as two miles northwest; three miles southwest and west; one-quarter mile east and 10 miles southeast, a total of approximately 25 square miles. The depth of Anahuac domal accumulative area is fixed and accepted at 15,000 to 18,000 feet, or approximately three miles. Therefore, there is about 75 cubic miles total drainage or accumulative area.

Water

At Anahuac field there are not several classifications to be made of connate waters, as there are in a majority of producing areas. There is no water problem except "bottom water," which lies immediately under the oil sand and "edgewater" which lies down the flanks of the oil sand, and which always under its head, migrates toward the top of the structure, replacing oil as production continues.

The water condition under this big head is ideal for the maximum recovery of the oil from the sand; it will be of great value where the reservoir pressure has (by depletion) dropped below the 500 pound gauge point.

Anahuac field is being developed so as to use the "water drive" with maximum efficiency, in that the oil is and will be withdrawn at a sufficient low rate to permit the water to completely replace the oil in the pore spaces of the sand. To do this the field must be produced in such manner that a maximum bottom hole pressure will constantly be maintained, which can be done only by controlling the rate of flow. Anahuac is and will be produced with no underground waste, which means the maximum utilization of the impounding forces necessary for migration of oil through the sand and lifting the oil to the surface. This means production without excessive gas/oil ratios and at the rate sufficiently slow that the hydrostatic head can exert its most efficient force.

Middleton 3, one of the high wells in the field, was deliberately drilled into water to determine its level, which was established at 7172 feet. Middleton 6 is the lowest producing well in the field and is located on the south flank of the structure where there is no gas cap. The difference in the water level of these two wells is due to the vertical pressure of the 185-foot gas cap above the oil sand in Middleton 3. This condition may be expected under the gas cap in direct proportion to its height over the producing area.

In Table 5 all statistics have been compiled on the basis of a water line at 7144 feet, which is 28 feet higher than one of the major companies uses. This has been done to insure an additional factor of safety for the high wells, and is the highest water line (consistent with engineering data) which seems fair to use. Wells having the top of the sand below 7144 feet, naturally have water at the top of the sand.

A number of water samples have been analyzed in an attempt to check structural information and to correlate the water horizons on a basis of their chemical characteristics. Also the samples have been analyzed to determine porosity, possible and probable saturation and the probable and possible extraction of oil from the sands. The percent of porosity has been fixed at 15 percent. Many samples show 24 percent, a few 17½ to 19; 15 percent is conservative, but safe.

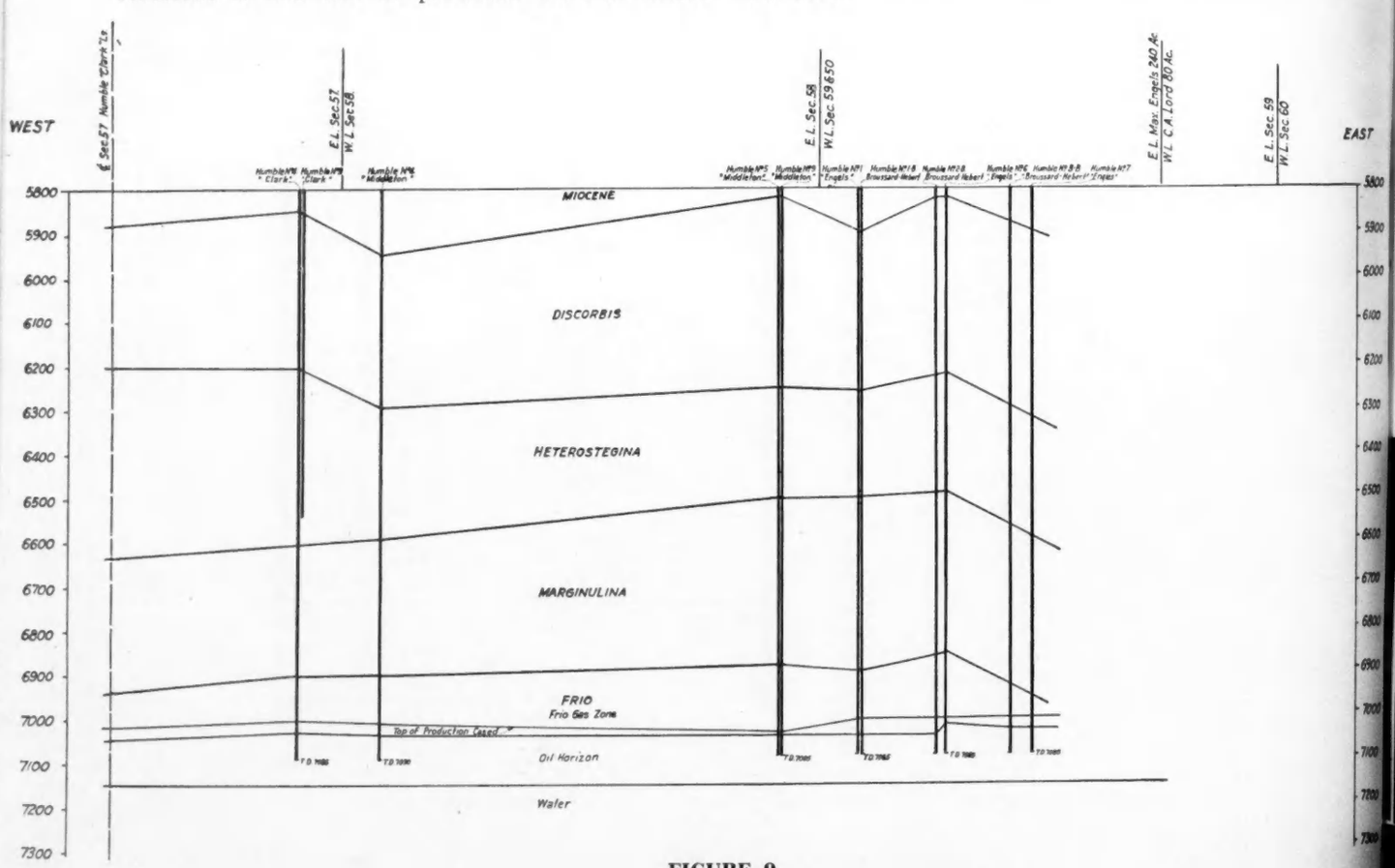

FIGURE 9
Along north line of Section 59 and through Section 57.

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A.P.I. Southwest

LARGE attendance anticipated for meeting, which is to take place on April 1 and 2 in Dallas, Texas.

R. D. RISSER, left, is chairman of the Southwestern District of the American Petroleum Institute Division of Production. He was elected to the position a year ago. Risser has been with Shell Petroleum Corporation for a number of years, and at present is superintendent for the company in Southern Louisiana district. He has assisted in the arrangement of the program, and will be a busy man during the two-day meeting in Dallas.

A VERY interesting program on such a wide variety of subjects that it should appeal to everyone has been arranged for the spring meeting of the Southwestern District of the American Petroleum Institute, Division of Production, which is to take place Thursday and Friday, April 1 and 2, at the Baker Hotel in Dallas, Texas. Important economic phases are to be discussed by speakers, and, of course, new technical and operating developments and trends will receive much attention. Five prominent speakers are to address the assembly on different economic subjects, and seven technical papers are to be presented on drilling and producing practices.

R. D. Risser, superintendent in southern Louisiana for Shell Petroleum Corporation, is chairman of the Southwestern A. P. I. District this year, and will lead the meeting through its various sessions. The program has been arranged under the chairmanship of A. G. Levy, petroleum engineer for The Texas Company at Shreveport, with the assistance of Carl A. Young, secretary of the American Petroleum Institute Division of Production, and others.

Economic Program

Because of the growing interest in economic phases of the industry, and

THE DALLAS MEETING is to offer entertainment as well as economic and technical discussions, and the man in charge of a group of local oil men that has made arrangements for this is John A. Ritter, right. He has extended an invitation to the wives of the men attending, and promises they will enjoy a number of events arranged. After engaging in the electrical field, Ritter joined Sun Oil Company, with whom he is now serving as superintendent of production.

GEORGE A. HILL, JR., left, is serving his third term as chairman of the API Division of Production, and will address the assembly at Dallas. He entered the law business after graduating from the University of Texas in 1911. Six years later he became associated with Houston Oil Company of Texas as a general attorney. Later Hill became general counsel for the company. In 1925 he was made vice president and director of Houston Pipe Line Company, a subsidiary. Executive vice president and director of Houston Oil Company of Texas was his next step, which was followed by the office of president in 1932, and which position he still occupies.

W. R. BOYD, below, has been with the American Petroleum Institute since 1920, and at present is executive vice president. Although his headquarters are in New York, he still manages to spend some time in his native state, Texas. Boyd will address the Southwestern District of the Institute's Division of Production during its meeting in Dallas. He is a member of the Texas Bar, and formerly engaged in the banking business in Texas.

District Meeting

INTERESTING program including both economic and technical subjects has been arranged for the meeting.

A. G. LEVY, right, is chairman of the program committee for the meeting. Shortly after graduating from the University of Vermont in 1916, he entered the oil business in Texas, and has performed the following duties: roustabout, roughneck, driller, toolpusher, supervisor of seismic exploration, land man, field superintendent, and now is petroleum engineer for The Texas Company at Shreveport. With the exception of about 18 months during 1924 and 1925, all his service has been for The Texas Company in the United States and West Indies.

particularly due to the recognition that the petroleum engineer and superintendent is to play a larger part in this work, the addresses on these subjects are expected to attract much attention.

On Thursday, April 1, Wallace E. Pratt, vice president in charge of land and geology for Humble Oil & Refining Company, Houston, will address the meeting on "Trends and Potentialities of Oil Development in Southwestern United States." This part of the United States is of increasing importance to the industry each year, and today represents the greatest portion of known crude reserves in the nation. In addition, the production from this area accounts for more than 50 percent of the United States daily output. Moreover, Southwestern United States is showing a larger growth in both crude reserves and production than any other district. Pratt, who is well qualified to discuss this subject, will offer some interesting thoughts and conclusions in his address.

Jake Hamon of Cox & Hamon, Dallas, will speak on "Taxation—An Over-Riding Royalty." He will offer a new viewpoint on the taxation problems that confront the industry. Hamon is probably better qualified to handle this subject than anyone in the Southwest, as he is president of the Mid-Continent Oil & Gas Association of Texas, which is the leading tax organization of the industry in Southwestern United States.

W. R. Boyd, Jr., executive vice president of the American Petroleum In-

JAKE L. HAMON, below, is with Cox & Hamon, independent operators of Dallas. He will discuss the increasingly important subject of taxes at the Southwestern API District meeting. This is a subject with which he is thoroughly familiar, as he is devoting freely of his time to this and other industrial problems. Hamon is serving his second term as president of the Mid-Continent Oil & Gas Association of Texas, which places him in a position to obtain vital data on oil taxation.

WALLACE E. PRATT, right, will address the meeting on "Trends and Potentialities of Oil Development in Southwestern United States." He is vice president in charge of lease, scouting, geological and geophysical departments for Humble Oil & Refining Company, Houston. His first connection with the oil business was with the Kansas Geological Survey. Subsequently, he was with the Division of Mines, Bureau of Science in the Philippines. From 1916-18, Pratt served The Texas Company as geologist in Mexico, Central America and in Texas. In 1918, he joined Humble Oil & Refining Company as chief geologist, was made a director in 1925 and a vice president in 1933.

M. J. NORRELL, left, will start the "fire works" by delivering the address of welcome to all API members. He is vice president of Magnolia Petroleum Company, Dallas.

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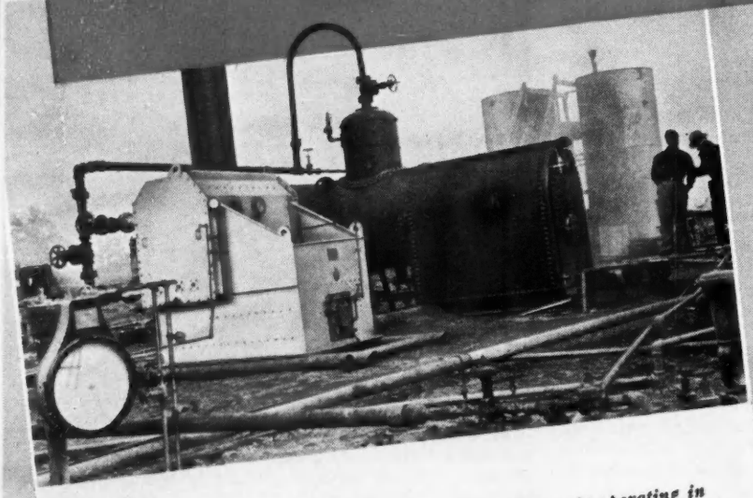
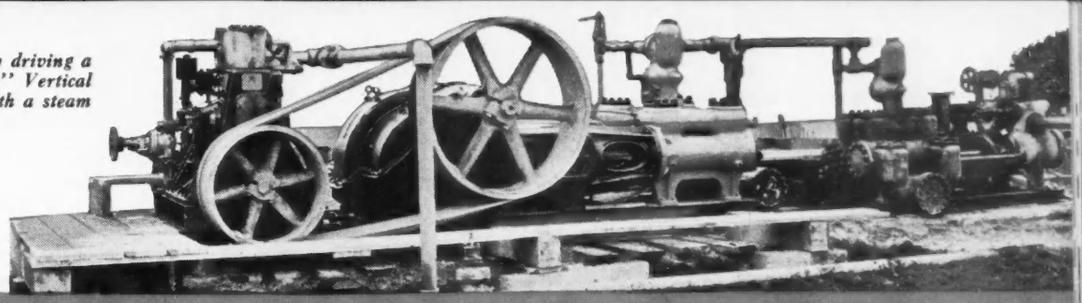
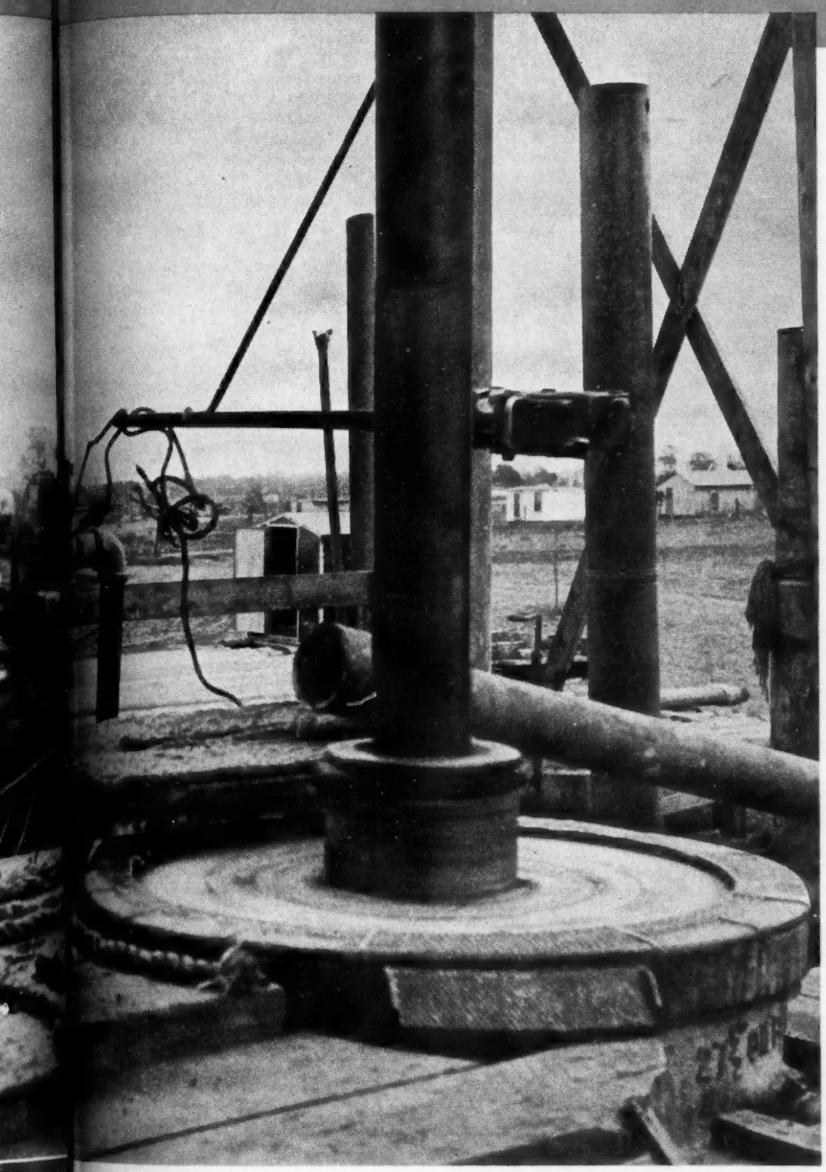


Ample steam for all requirements of this heavy-duty rig operating in the Fitts Pool, Oklahoma, is supplied by an efficient "OILWELL" Steam Power Plant consisting of a single 125 horse-power boiler, a separately-fired superheater and a feedwater heater-pump unit (shown below at left). The rig is completely equipped with "OILWELL" Steam-Saving Machinery.



Steam requirements are greatly reduced by driving a power slush pump with an "OILWELL" Vertical Twin Cylinder Steam Engine equipped with a steam saving hand-controlled variable cut-off.

Steam-Saving Machinery



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stitute, will come from New York to address the meeting. He has not made known his exact subject, but always delivers something interesting and pertinent. It will be on some economic condition now facing the industry.

Another speaker whose subject has not been announced is George A. Hill, Jr. Hill is president of Houston Oil Company of Texas, Houston, and also is vice president in charge of the Production Division of the American Petroleum Institute.

M. J. Norrell, vice president of Magnolia Petroleum Company, Dallas, is to deliver the address of welcome.

Technical Program

The seven technical papers will cover varied subjects. Several of the papers have been prepared under joint authorship, there being 12 authors for the seven addresses.

The following technical program will be presented:

"Foundations and Substructures in the Gulf Coast," by W. F. Herbert, The Texas Company, Houston, Texas, and H. E. Anderson, Texas Creosoting Company, Houston, Texas.

"Modern Developments and Applications in Steam Power," by Geo. B. Kitchell, Humble Oil & Refining Company, Houston, Texas.

"New Developments in Well Completions in Texas Gulf Coast and Southern Louisiana," by I. W. Alcorn, The Pure Oil Company, Houston, Texas, J. U. Teague, Humble Oil & Refining Company, Houston, Texas, and W. A. Alexander, Shell Petroleum Corporation, Iowa, Louisiana.

"Blowouts and the Development of Mechanical Control Equipment," by Madden T. Works, Cameron Iron Works, Houston, Texas.

"Capacity Pumping of Oil Wells," by S. B. Sargent, Sargent Engineering Corporation, Huntington Park, California.

"Flow of Mixtures of Oil and Water Through Sand," by F. B. Plummer, J. C. Hunter, Jr., and E. H. Timmerman, all of University of Texas, Austin, Texas.

"Causes and Prevention of Blowouts While Drilling," by Chas. B. Carpenter, United States Bureau of Mines, Dallas, Texas.

Ladies Are Invited

The Dallas arrangements committee has made a special effort to make the meeting enjoyable for oil men and their wives. Particular stress has been given toward arranging entertainment for the ladies, and all are invited. John A. Ritter, Sun Oil Company, is chairman of the arrangements committee. An interesting program of informal entertainment is planned for Friday evening, April 2, at 7 p.m. It will consist of a dinner-dance to be held at "Chez Maurice" atop the Santa Fe Building. A nationally known orchestra will play for dancing, and several special numbers have been arranged, including a floor show, music by the Booker T. Washington Choral Club, and a humorous review of Southwestern oil personalities.

On Friday afternoon a special style show arrangement has been made with Nieman-Marcus Company. All ladies attending the A. P. I. are cordially invited.

Pacific A.P.I.

ANNUAL MEETING TO BE ON APRIL 13 IN LOS ANGELES

Los Angeles.—Oil men from all parts of California are expected to attend the annual spring meeting of the American Petroleum Institute Division of Production, Pacific Coast District, at the Biltmore Hotel, Los Angeles, on April 13, 1937. They will be attracted by a program of technical addresses, by the annual dinner, and by the opportunity of meeting one another and renewing old friendships.

A. L. Weil, president of the General Petroleum Corporation of California and of the California Oil & Gas Association, will be the principal speaker at the dinner, which will be held in the Biltmore Bowl. His subject will be "The History of the Oil Industry in California." He will be introduced by L. L. Aubert, Bankline Oil Company, chairman of the A. P. I. Pacific Coast district.

A. L. WEIL, president of General Petroleum Corporation of California, will be the principal dinner speaker at the annual spring meeting of the American Petroleum Institute Division of Production, Pacific District, April 13. He is a native Californian. For years he guided the company's legal affairs, having joined the firm when it was organized. Prior to becoming president in 1934, Weil was vice president and general counsel.

In the morning, in the Biltmore Theater, at the session on drilling, the following papers will be presented: "Field Control of Drilling Mud," by P. H. Jones, Union Oil Company of California; "Wire Line Core Barrel," by W. A. Clark, The Texas Company; "Rotary Table Horsepower," by C. S. Forsberg, Honolulu Oil Corporation, Ltd.; "Plant Pipe Reclamation," by K. C. Hayes, Standard Oil Company of California.

In the afternoon, in the Biltmore Bowl, at a session on production, the following papers will be presented: "Acidization of Oil Wells," by M. W. Morris, Standard Oil Company of California; "Reconditioning Procedure with Portable Equipment," by H. E. Winter, Union Oil Company of California; "Selection of Size of Oil Strings in Wells in California," by E. K. Parks, Standard Oil Company of California.

Committee chairmen in charge of plans for the meeting include Howard C. Pyle, Union Oil Company of California, Program; Ralph Marshall, Oil Well Supply Company, Arrangements; and Bruce Barkis, Rio Grande Oil Company, Nominations. The annual election of district officers and members of the advisory committee will be a feature of the evening program at the dinner.

All men connected with or interested in the oil industry are invited to attend the technical sessions and the dinner, whether or not they are members of the Institute. Dinner tickets are available at the Los Angeles office of the American Petroleum Institute, 510 West Sixth Street, Room 1217. No charge will be made for admittance to the technical sessions.

LESS MOTOR FUEL

Natural gasoline output decreases in January

Washington, D. C.—A material decline in natural gasoline production in January is disclosed by the current monthly report of the Bureau of Mines, which places the daily average at 5,056,000 gallons as against 5,372,000 gallons in December. The daily average production for the month, however, was well in excess of the 4,949,000 gallons reported for January, 1935.

Total production of natural gasoline in January, the bureau announced, was 156,744,000 gallons compared with 166,530,000 gallons in December and 153,426,000 gallons in January of last year.

The most notable changes in production from December, it was stated, were in the Panhandle field and Louisiana, where the daily averages declined 70,000 and 77,000 gallons, respectively, but decreased output also was noted throughout all the major districts of Oklahoma and in west central Texas.

During the month, stocks increased at refineries from 101,682,000 gallons to 106,638,000 gallons, but were reduced at plants and terminals from 68,628,000 gallons to 62,706,000 gallons.

MEN IN THE INDUSTRY'S NEWS

WILLIAM REINHARDT BECOMES VICE PRESIDENT OF UNION PACIFIC RAILROAD IN CHARGE OF OIL DEVELOPMENT

»

RESIGNS AS GENERAL MANAGER OF KETTLEMAN NORTH DOME ASSOCIATION TO ACCEPT

»

APPOINTMENT of William Reinhardt, Southern California oil executive, as vice president of Union Pacific Railroad in charge of oil development, has been announced by W. M. Jeffers, executive vice president of the railroad. Until his appointment, Reinhardt has been general manager of Kettleman North Dome Association.

With substantial oil development already under way by Union Pacific on its Wilmington property, which marks another progressive move by the railroad in the Southern California area, the new vice presidency was created. Reinhardt will make his headquarters in Los Angeles.

Reinhardt began his career as field engineer for Shell Oil Company in 1917, and following a series of promotions was made vice president in charge of production for Shell in 1926. He held this post until he was chosen as chairman of the committee to organize the unit plan in the Kettleman fields in 1931. Following the unit plan organization, he was appointed general manager of the Kettleman North Dome Association.

WILLIAM REINHARDT

G. STANLEY WISSLER, chief paleontologist, Union Oil Company, Los Angeles, was held president of the Society of Economic Paleontologists and Mineralogists, Division of the American Association of Petroleum Geologists, at the annual meeting held in Los Angeles. He succeeds Merle C. Isrealsky. The new vice president is F. W. Rolshausen, Humble Oil & Refining Company, Houston, while the secretary-treasurer is Henry V. Howe, department of geology, University of Louisiana.

BYRON RIFE, independent operator of San Antonio, has become associated with Henry A. Ley of Fort Worth and will engage in the exploration of oil and gas prospects in South Texas. Permanent offices will be located in the Milam Building, San Antonio.

F. H. McGUIGAN, formerly with Shell Petroleum Corporation at Midland, Texas, has opened offices at Abilene, Texas, and is engaged in consulting work.

MARCEL SCHLUMBERGER, of Paris, France, president of Schlumberger Well Surveying Corporation, will visit Houston headquarters of his organization, as well as the different field crews, during April. He recently returned to Paris from South America, where he has been studying oil fields of Venezuela and Trinidad.

W. W. LECHNER and G. E. Hubbard, partnership operators in East Texas, with headquarters at Dallas, accompanied by their wives, left for New York last week to board the S. S. Santa Lucia for an extended vacation in South America. The party will return about June 15.

P. L. CALLAN, test engineer of the Chicago Pneumatic Tool Company, discussed the theory and mechanics of compressors Monday night before 50 Oil City and Titusville members of the Pennsylvania State College petroleum extension course at the company's Franklin plant. E. C. Stroup, of the Pittsburgh office of the company, aided in the discussion. Members of the class are, for the most part, connected with the oil industry.

ROBERT D. FARISH, president of Farlyn Drilling Company, is in the hospital with concussion and a broken right arm as a result of an accident which occurred March 21 when he was playing polo on his field in Houston. March 26, he was reported doing nicely.

H. R. BOUGHNER of Tulsa, district manager in the Mid-Continent field for Rhodes Metallic Packing Company of Detroit, Michigan, now is convalescing after three months stay in a Paris, Texas, hospital, following a serious automobile accident. Mrs. Boughner, who was with him at the time, also has been confined to a hospital. They now are at home at 144 East Twenty-First Street in Tulsa, where Mr. Boughner is carrying on his work.

J. E. MOORHEAD, executive secretary of the Pennsylvania Grade Crude Oil Association, has been named chairman of the commercial group for the 1937 campaign of the Oil City community fund association.

HORACE DUFTON, for a number of years connected with various oil companies in Mexico, has accepted a position in the warehouse department of Mene Grande Oil Company, formerly Venezuela Gulf Oil Company, at Maracaibo.

STEWART FORBES has been appointed chief accountant of Cia. Mexicana de Petroleo "El Aguila," S. A., at Tampico. He succeeds K. G. Kitchner, who resigned March 1. Forbes has been in the accounting department of El Aguila at its Minatitlan refinery for several years.

JAMES A. MOFFETT, vice president of Standard Oil Company of California and chairman of California-Texas Oil Company, Ltd., is on an extended tour of the Far East, where he will inspect properties of the latter concern and study business conditions. He is not expected back to his New York headquarters until next July.

DR. K. C. HEALD, chief geologist for Gulf Oil Corporation, Pittsburgh, has returned to the United States and is recovering from injuries he received in an automobile accident January 31, in Trinidad. At present Dr. Heald is at Miami Beach, Fla.

J. GARFIELD BUELL has been appointed by the International Petroleum Exposition to head a committee to arrange for a delegation of oil men to attend the World Petroleum Congress in Paris, France, June 14 to 19.

BERT HULL, president, The Texas Pipe Line Company, has returned to his headquarters at Houston after a trip to New York City.

J. B. WESTON, 57, manager of materials and supplies for Tide Water Associated Oil Company in Southern California, died in Los Angeles March 20 and a Masonic funeral was held for him March 24. He is survived by a widow and one son. Weston had been in the employ of Associated Oil Company and associated companies for 27 years.

MARTIN HUBBARD, 33, driller with Cia. Mexicana de Petroleo "El Aguila," S. A., died in Tampico March 20 as the result of injuries sustained on March 18 when he fell from a derrick in Pozo Rica field. Hubbard, a native of Oregon, has been in Mexico for 12 years. He is survived by his wife and three children.

E. D. DAVENPORT, 54, head of E. D. Davenport, Inc., producing unit, Dallas, was killed instantly March 23 along with four other persons when his car, driven by a chauffeur, crashed with a truck near Austin, Texas.

J. E. (PETE) URSCHEL, 55, member of the producing firm of Moss & Urschel, Dallas, died March 18 in a Dallas hos-

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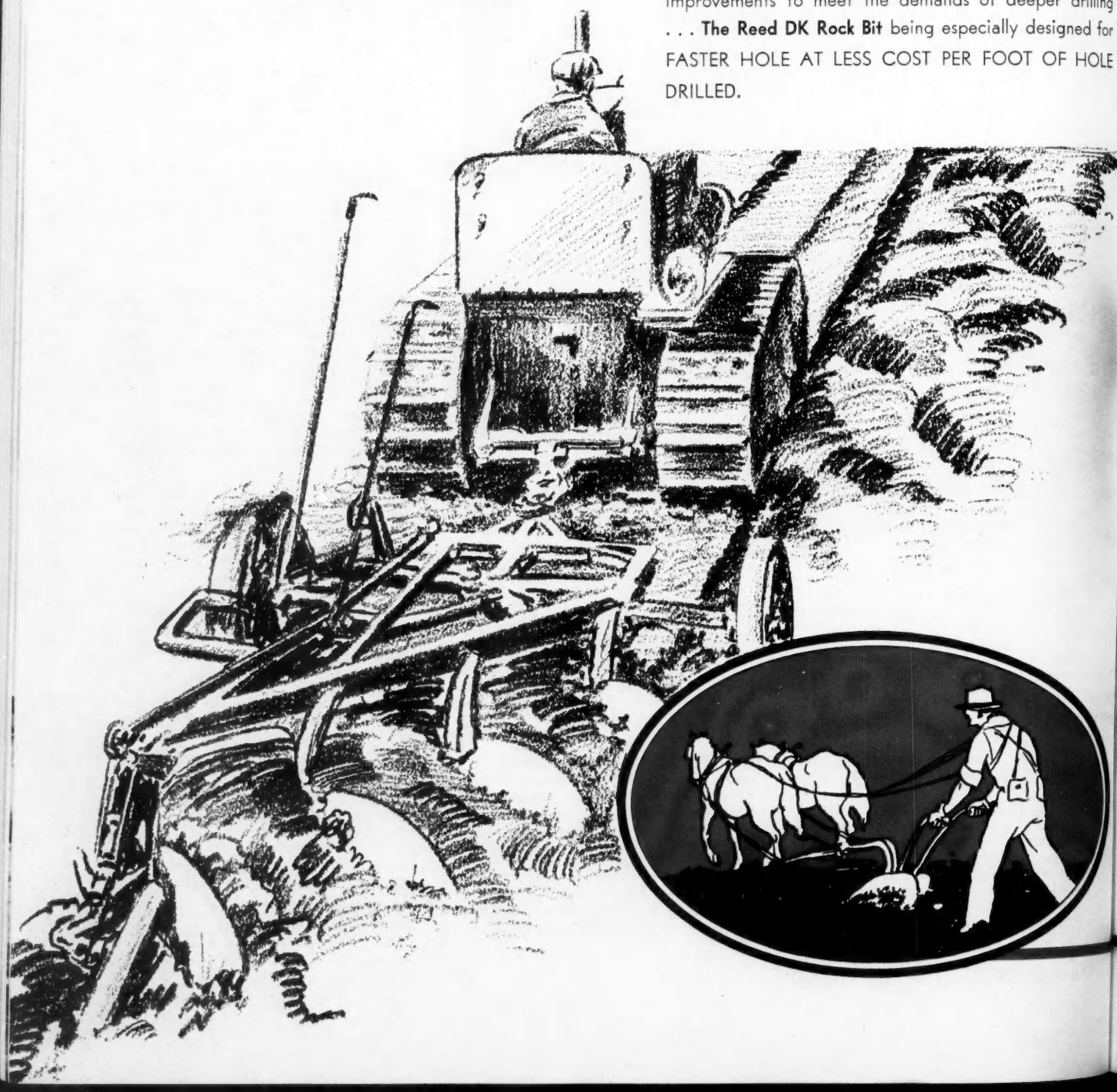

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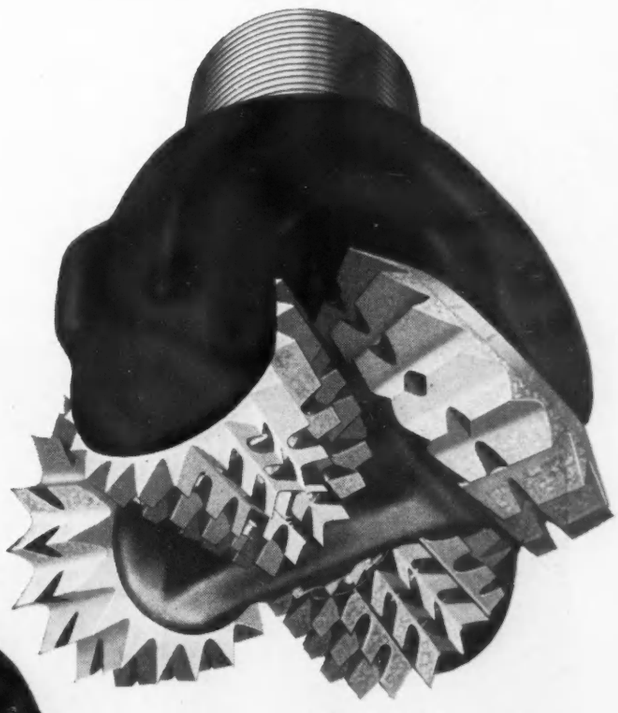

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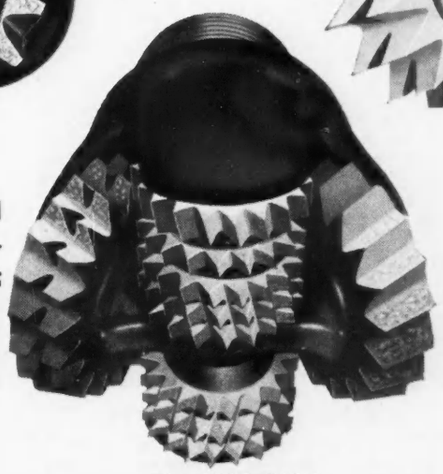

The REED DK 3

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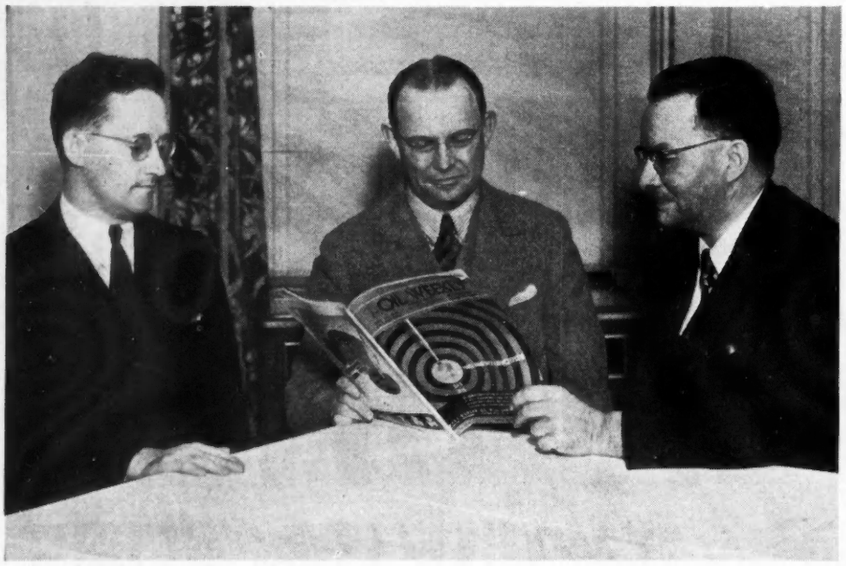


Officers of the American Association of Petroleum Geologists elected in Los Angeles recently at the twenty-second annual meeting. Left to right: Ira H. Cram of Tulsa, secretary-treasurer; H. B. Fuqua, chief geologist of Fort Worth division, Gulf Oil Corporation, president; and C. L. Moody of Shreveport, vice president.

pital after a brief illnes. He was general superintendent for the late Col. Alfred E. Humphreys when the latter staged his major drilling program at Mexia. Urschel was retained when Pure Oil Company bought the holdings, but later resigned to operate independently. Funeral services and burial took place at Mexia March 20.

V. B. LIKINS, president of Osage Metal Company of Oklahoma City, is on a business trip East, during which time he will visit in New York and other points in that territory.

HARVEY D. POWER of Oklahoma City has succeeded to the presidency of White Deer Pipe Line Construction Company, having acquired the interests of Chas. F. Rayl of El Dorado, Kansas.

SUHR TO PRESIDE

Interesting topics for N. P. A. Cleveland program

National Petroleum Association has arranged a program of unusual interest for presentation at the thirty-fourth semi-annual meeting to be held at the Cleveland Hotel, Cleveland, April 15 and 16, with Charles L. Suhr, president of National Petroleum Association, scheduled to preside at both general sessions.

Wilmer R. Schuh, president of National Association of Petroleum Retailers, will speak on developments in petroleum marketing which have come about in consequence of the adoption of the so-called Iowa plan. The title of his talk will be "Pilgrim's Progress of Petroleum Retailers."

Whiting Williams, industrial consultant, author, lecturer, will speak on "Management and Labor in 1937." Williams is the author of the book, "What's on the Worker's Mind," and has been a student of management-labor conditions for many years.

Hon. Ernest O. Thompson, Texas Railroad Commission, will speak on "The Importance of the Interstate Oil Compact to the Oil Industry in the Eastern Territory." The producers of the Eastern States will be given an intimate picture of the whole problem of state control in Colonel Thompson's talk.

New Officers of Society of Exploration Geophysicists

J. C. KARCHER

Originator and developer of the use of the reflection seismograph, John Clarence Karcher, Dallas, president of Geophysical Service, Incorporated, is the society's new president. He took a B.S. degree at the University of Oklahoma, a Ph.D. at the University of Pennsylvania.

FABIAN M. KANNESTINE

An active geophysical operator in Texas and Louisiana Coasts, Fabian Miller Kannenstine of Houston firm of Rosaire and Kannenstine, vice president elect of the geophysicists, took a B.S. degree from Washington University in St. Louis and a Ph.D. from the University of Chicago.

MISS M. E. STILES

Twenty-two years af academic and business success as teacher and practicer of geology and geophysics render Miss M. E. Stiles, secretary of Independent Exploration Company, Houston, particularly well fitted for the post of secretary-treasurer of the Society of Exploration Geophysicists.

Market Promising

STRICTER PRODUCTION CONTROL IN APRIL GIVES IT STRENGTH

THE market outlook is promising, in view of the fact stricter control of crude oil production is scheduled for April, under new allowables that have been prescribed by some of the leading producing states.

The new proration schedules are expected to bring about a better balancing of production with market requirements, and to interrupt the additions to crude storage that have been causing anxiety in the past two months.

A large part of the addition to crude storage has been occuring in Texas, and consequently the new Texas allowables alone will do much toward restoring the balance between production and demand. The Texas Railroad Commission, having studied the recent additions to storage in the state, prescribed April allowables that are calculated to conform closely with the market requirements.

Effective Crude Control Looms

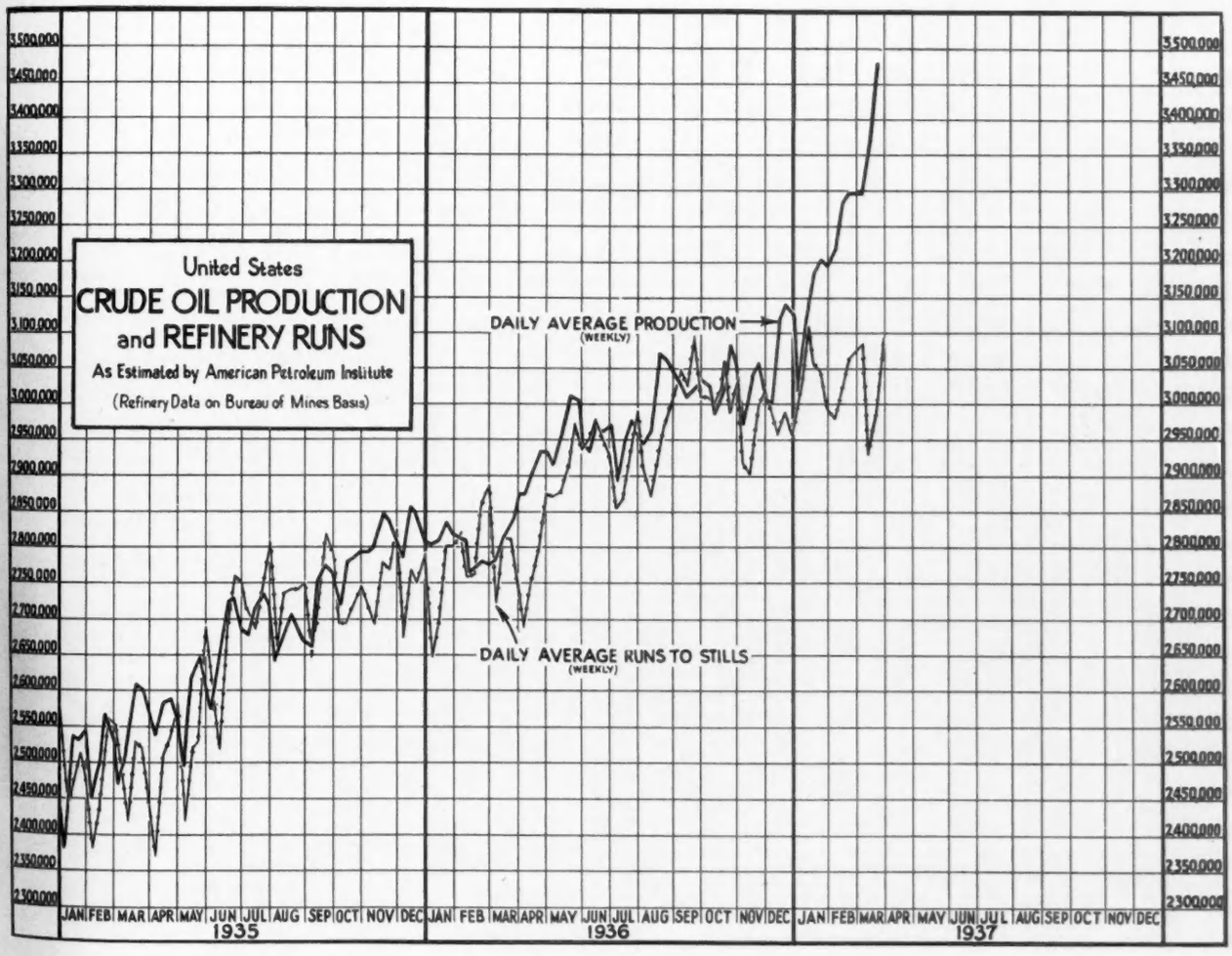
Oklahoma also will adhere more closely to the Bureau of Mines estimates of demand in April than in March. California and Louisiana in March had state allowables below the federal allocations, and are expected to conform fairly well with the federal quotas in April, in actual protank car prices last week continued to duction. It appears consequently, that the national crude production in April will not be so high as to cause any important additions to storage.

The better outlook regarding crude control naturally has had a beneficial effect on the refined oil markets. Gasoline improve, and late in the week stood in numerous instances one eigth cent a gallon higher than one week before. Kerosene prices were mostly unchanged. Fuel oils continued to show the effect of more moderate weather, and prices sagged another one eighth cent for some areas and grades.

Crude Stocks Up More

Recent concern over mounting crude oil stocks was further justified last week in the latest weekly report of the Bureau of Mines, indicating that 1,002,000 barrels more of crude went into storage in the week ended March 13. That was the seventh consecutive week of increasing crude stocks. In the seven weeks from January 23 to March 13 the nation's crude stocks were increased 5,402,000 barrels. A large part of that increase occurred in the Mid-Continent, mostly in Texas.

The seriousness of the recent additions to storage is minimized, of course, by the promise of stricter control of production in April. Furthermore, the situation appears relatively favorable, when present crude stocks are compared with those a



year ago. The present stocks are about 20,000,000 barrels lower than those of this time last year.

Gasoline Stocks Justified

Similarly, recent additions to gasoline storage, carrying the inventories to the highest levels on record, are not particularly alarming when the prevailing circumstances are taken into consideration.

Total gasoline stocks rose further by 387,000 barrels in the week ended March 20, reaching another new all-time peak of 81,623,000 barrels. That total was 11.6 percent above the 73,157,000 barrels on hand a year previously. However, such an increase in storage is about in line with the gain that has occurred in the demand for gasoline. The Bureau of Mines has estimated that gasoline consumption in April, this year, will run about 10 percent higher than in April, last year.

Gasoline Prices Better

Tank car prices of U. S. Motor gasoline, f.o.b. Oklahoma refineries late last week appeared to be about as follows: 62 octane and below, 4⅞ to 5 cents a gallon; 63 to 67 octane, 5¼ to 5½ cents; 68 to 70 octane, 5⅞ to 6 cents.

Corresponding prices in the Chicago market were: 4⅞ to 5 cents, 5⅛ to 5⅜ cents, and 5⅝ to 5⅞ cents.

CRUDE PRICES

Complete table of prices paid for crude oil at the well in principal fields will be found on page 48 of The OIL WEEKLY, March 1. Hereafter this schedule will appear only in the first issue of each month except when changes are announced.

In East Texas the usual third-grade gasoline available in the markets was up one-eighth cent to 4⅞ cents a gallon.

Kerosene prices, largely unchanged, were from 4⅛ to 4⅜ cents a gallon for the 41-43 water white grade and 4¼ to 4½ cents for the 42-44 water white grade, at the Oklahoma refineries. These same minimum prices prevailed in the Chicago market, but the top prices in that area were not as high by one-eighth cent.

In the Chicago market No. 1 white burning oils ranged between 3¾ and 4⅛ cents a gallon, and the No. 1 straw from 3⅝ to 3⅞ cents. The No. 2 straw was 3⅜ to 3⅝ cents, and the No. 2 dark from 3¼ to 3½ cents. No. 3 was priced from 3¼ to 3½ cents a gallon. The No. 4 oils for industrial use ranged from 95 cents to $1.05 a barrel, the No. 5 from 82½ to 90 cents, and the No. 6 from 75 to 85 cents.

Weekly Trends of United States Production and Stocks

(Figures American Petroleum Institute, except crude stocks, Bureau of Mines.)

WEEK ENDED—	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
January 23, 1937	3,205,150	3,055,000	285,211,000	68,180,000	103,441,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 6	3,220,750	2,980,000	286,116,000	70,535,000	101,136,000
February 13	3,286,050	3,020,000	286,158,000	73,585,000	100,735,000
February 20	3,295,950	3,065,000	287,574,000	74,798,000	99,391,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 6	3,298,800	2,930,000	289,611,000	80,102,000	99,115,000
March 13	3,372,850	2,985,000	290,613,000	81,236,000	98,964,000
March 20	3,448,150	3,095,000	.....	81,623,000	97,287,000
March 21, 1936	2,835,950	2,815,000	310,350,000	73,157,000	95,378,000

Summary of Wells Completed in the United States

WEEK ENDING MARCH 20, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1937	Total Completions this Date 1936
Alabama	....	....	....	....	.....	1	2
Arkansas	....	....	....	....	.....	13	24
California	20	18	....	2	7,245	277	238
Colorado	2	....	....	2	.....	5	3
Florida	....	....	....	....	.....	....	....
Illinois	....	....	....	....	.....	11	4
Indiana	....	....	....	....	.....	33	60
Kansas	42	33	1	8	48,138	495	323
Kentucky	3	2	....	1	20	51	34
Louisiana	16	12	1	3	3,281	161	223
Michigan	16	7	4	5	3,647	194	162
Mississippi	....	....	....	....	.....	5	1
Montana	1	....	1	....	.....	17	19
Nebraska	....	....	....	....	.....	....	....
New Mexico	19	18	....	1	28,237	164	108
New York	....	....	....	....	.....	3	....
Ohio	17	6	9	2	136	402	487
Oklahoma	39	25	3	11	55,114	664	609
Pennsylvania	4	1	1	2	102	35	....
Texas	278	217	5	56	283,988	3,199	2,643
Utah	....	....	....	....	.....	....	....
West Virginia	4	2	1	1	3	206	140
Wyoming	3	2	....	1	1,008	23	11
Total this week	464	343	26	95	430,919	5,959	5,091
Total last week	480	332	53	95	419,731	....	....
Total this year	5,959	3,958	565	1,436	5,090,872	....	....

CALIFORNIA RAISE

Retail and tank wagon prices up half cent

EFFECTIVE morning of March 23, Standard Oil Company of California increased retail and tank wagon prices of all grades of gasoline one-half cent a gallon throughout its trade territory on the West Coast, and other large companies met the raise. Many of the small independent dealers also increased their price, some going as high as one cent increase. Standard's announcement said, "This adjustment in prices is due to generally increased costs of doing business."

Not many weeks ago price for Ethyl gasoline was readjusted upward to get back to the old differential between regular grades and Ethyl. It is generally expected there will be annouced soon an increase in the posted price of crude oil in California, and if and when this increase comes, it is expected there will be a further increase in gasoline in keeping with the posted price for crude.

In spite of the so-called over production of crude oil in California during the past several months, stocks have been reduced. Producers are becoming rather insistent that the crude posted price be increased, and they point to reduction of stocks, to good demand for fuel oil, to continued fair movement of products in the offshore market, and the payment of premiums ranging from 15 to 30 cents a barrel for desirable light crude produced in the Los Angeles Basin.

Major purchasing concerns are not adverse to granting the requests for a raise in posted prices, provided conditions warrant. But they are determined not to increase their stocks beyond the present point. In past years, fears were expressed that if prices were increased, producers would be tempted to increase their production considerably, but under conditions such a development is hardly expected.

During the past several months, daily average production in California has run close to 590,000 barrels in the face of a so-called allowable of 551,000 barrels a day. Producers point out that in the face of such a condition, stocks in most instances have shown declines, even during the winter. Several factors enter into the matter, such as the very large consumption of fuel oil for heaters in the orange and lemon orchards of Southern California during the recently extreme cold weather, and the large amount of fuel oil

Comparison of Permits Granted for New Wells

STATE	Week Ending Mar. 27	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	15	23	35	20	103
California	29	110	312	185	1,054
Louisiana	35	72	212	266	1,107
Kansas	38	171	513	369	1,873
Michigan	16	71	208	143	762
Oklahoma	71	206	611	604	2,594
Texas	332	1,703	4,092	3,028	15,582
Total	536	2,356	5,983	4,615	23,075

Output Still Rising

TEXAS AGAIN RESPONSIBLE FOR PEAK U.S. PRODUCTION

UNITED STATES crude oil production in the past week, ended March 27, showed a further slight increase and again established a new all-time record, as it had been doing every week this year, with only one exception. Last week's production averaged 3,434,925 barrels daily, or 8450 barrels a day more than in the previous week. That was 275,925 barrels a day more than the daily average recommended for the month by the Bureau of Mines, in its estimates of the crude output needed to meet the market requirements.

This large excess over the bureau's suggestion indicates that last week brought a continuation of important additions to crude oil storage. The crude stocks have been increasing steadily for about two months.

However, more effective balancing of crude production with demand is in prospect beginning April 1, under the more strict allowables scheduled in some of the leading producing states, particularly Texas.

The further slight increase in crude output last week resulted from gains in Texas and Louisiana that outweighed decreases in Oklahoma, Kansas, California, and New Mexico.

Large Increase in Texas

Texas last week averaged 1,410,500 barrels daily, or 19.200 barrels a day more than in the previous week, and 153,900 barrels a day more than the Bureau of Mines recommendation.

Louisiana production last week was up 7950 barrels to 250,150 barrels daily, which was 10,150 barrels a day more than the federal allocation.

Oklahoma averaged 640,525 barrels a day last week, or 16,925 barrels a day less than in the previous week, although 49,825 barrels a day more than the Bureau of Mines suggestion.

Kansas output was down 1675 barrels to 186,650 barrels daily, but still exceeded the federal allocation 8650 barrels daily.

California produced at the average rate of 592,000 barrels daily, 2000 barrels lower than the week before, and 22,000 barrels above the federal allocation.

New Mexico averaged 102,900 barrels daily last week, down 300 barrels, but 14,700 barrels a day more than the estimate of demand.

being purchased by Japan, plus certain increased consumption in other lines. Even the consumption of gasoline on the West Coast is showing a healthy increase, in spite of the season.

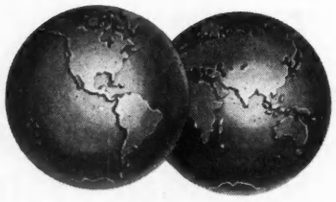
It is being freely predicted that the allowable figures for the state will be increased for April and May to around 590,000 barrels a day, and maybe to 600,000 barrels during the early summer. But such allowable will be about equal to actual production. Only a few fields in the state could produce much more oil per day than now being produced. Kettleman Hills could increase its production. So could Elwood and certain other fields, but such fields are controlled largely by major companies who are now realizing the necessity of conserving their reserves for future needs. It is doubted if all of the Los Angeles Basin fields together could in a proper manner increase daily production as much as 15,000 barrels a day.

The outlook for the California producer during the coming year is better than good. It is practically sure they will be paid an increased price for their crude, and this will bring about greater efforts to keep their wells in good condition, and in addition, they will be disposed to drill an increased number of new wells.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in Mar.)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING March 27	March 20
TEXAS—			
Texas Panhandle	.....	76,600	74,500
North Texas	.....	67,800	67,600
West Central Texas	.....	32,600	31,700
West Texas	.....	208,100	208,200
East Central Texas	.....	124,400	119,600
East Texas Field	.....	454,800	454,500
South Texas	.....	234,300	226,800
Texas Gulf Coast	.....	211,900	208,400
Total Texas	1,256,600	1,410,500	1,391,300
OKLAHOMA—			
Oklahoma City	.....	150,800	155,250
Seminole Area	.....	134,500	131,700
Crescent	.....	15,625	18,175
Lucien	.....	13,500	13,750
Fitts	.....	89,700	92,075
Edmund	.....	26,450	36,125
Moore	.....	14,675	15,175
Others	.....	195,275	195,200
Total Oklahoma	590,700	640,525	657,450
KANSAS—			
Ritz-Canton	.....	5,450	5,400
Chase	.....	9,175	8,250
Hollow-Nikkel	.....	4,125	4,075
Sedgwick	.....	4,825	4,725
Burrton	.....	16,225	16,725
Lorraine	.....	5,000	5,700
Russell County	.....	24,550	27,475
Silica	.....	19,025	18,000
Others	.....	98,275	97,975
Total Kansas	178,000	186,650	188,325
LOUISIANA—			
North Louisiana	.....	70,950	69,100
South Louisiana	.....	179,200	173,100
Total Louisiana	240,000	250,150	242,200
ARKANSAS	28,500	27,200	27,500
CALIFORNIA—			
Long Beach	.....	61,000	61,000
Santa Fe Springs	.....	44,500	44,500
Huntington Beach	.....	37,000	37,000
Dominguez	.....	24,500	25,000
Inglewood	.....	12,000	13,000
Ventura Avenue	.....	33,500	34,000
Seal Beach	.....	9,000	9,500
Midway-Sunset	.....	65,000	67,000
Elwood	.....	9,500	9,000
Kettleman Hills	.....	79,000	77,500
Mountain View	.....	21,000	21,500
Playa del Rey	.....	9,500	9,500
Others	.....	186,500	185,500
Total California	570,900	592,000	594,000
MOUNTAIN STATES—			
Wyoming	42,200	52,800	53,100
Montana	14,660	15,700	15,400
Colorado	4,300	4,600	4,500
Total Rocky Mountain States	61,100	73,100	73,000
NEW MEXICO	88,200	102,900	103,200
EASTERN STATES	114,700	113,700	114,700
MICHIGAN	30,300	38,200	34,800
Total United States	3,159,000	3,434,925	3,426,475



Edited by
WM. V. GROSS, Associate Editor

Trinidad Booming

SEVERAL "ALL TIME" HIGHS ARE REACHED DURING 1936

By VICTOR BRYAN

THE past year was a record year for the petroleum industry in Trinidad, and while the accomplishments in every direction were considerable, the most encouraging aspects are to be found in the seeds which were sown during 1936 for the enlargement and continuance of operations there in the years to come.

Several "All Time" Highs

Outstanding evidences of operating progress can be seen in the achievement of "all time" high records for the amount of oil produced during the year, for the footage drilled during the year, for the average number of drilling rigs working, for the average number of producing wells, and for the monthly production peak.

Comparative figures dealing with the above will be found in an accompanying table.

Future Brighter

Prospects for the future have been enhanced considerably; some hitherto rumoured extensions of known production areas have been proven; there has been and still continues a boom in exploratory drilling, and the obtaining of commercial production from deeper horizons should soon be an accomplished fact.

Scientific precision in the development of Trinidad's oil fields is a feature that has come to stay and there is now no room for haphazard methods of former times. Island operators are invariably up-to-date on the most improved methods obtaining in the more advanced countries of the world and are always quite receptive of new ideas tending to improve the accuracy and safety of operations.

Practical Value of Technologist

Years of the depression introduced the oil technologist as a man of practical value rather than the "psuedo-magician" he was apt to be considered before. The rough-and-ready men of those days are gradually giving place in Trinidad to personnel who come to the oil fields with a basis of university training which is readily applicable to the scientific problems encountered in actual operations.

Resultant benefits from this modern trend have been pronounced during 1936 and these are more clearly reflected in the more rapid and beneficial development of areas, corresponding with a factor of safety to the oil worker considerably in excess of less recent times.

Along the lines of land acquisition there must be added the great significance attaching to the declaration by the British government during 1936 that the crown would accept applications for exploration licenses for marine areas. This declaration was made during June, and by the end of the year nine companies have been recorded as applying for marine strips stretching from Port-of-Spain along the west coast, south coast, and a large section of the east coast of Trinidad island.

Apply for 389,500 Marine Acres

The area lying within the territorial waters of Trinidad that has been applied for is stated in the Royal Gazette as being approximately 389,500 acres.

The rush which has been made on all sides for acquisition of right in undeveloped territory has been tremendous and it stated that nearly half the total acreage of the colony will soon be held under leases or licenses of some kind.

In this connection mention must definitely be made of the great step which has been taken towards finding and developing petroleum in an area not situated somewhere in the south of the island where petroleum operations have been concentrated since the inception of the industry in the island.

This venture has taken the shape of a pooling by two of the largest companies in the island, Trinidad Leaseholds Ltd. and United British Oilfields of Trinidad, Limited, of their interests in an area more towards the north of the island. This joint interest has been transferred to Trinidad Northern Areas, a company which was formed for the purpose and which is now carrying out exploratory work over this virgin territory.

Cooperative Development Helps

Close cooperation between the operating companies continues to bring some of the biggest potential benefits to the local industry. As a result of such cooperation there is seldom any real need for any intensive offsetting campaigns with the resultant wastes and tendency towards inefficiency.

Boundary agreements between companies are becoming increasingly popular, and it is well known what great amount of good to the industry as a whole these arrangements can achieve.

The best indication of this class of cooperation can be taken from the fact that Trinidad Leaseholds, Limited, has been operating the Cruse field of Trinidad Central Oilfields on a joint account basis, and it is feasible to assume the success of this arrangement from the fact that Trinidad Leaseholds is now testing Trinidad Central Oilfields property in another area with, it is understood, an option to operate it on a similar joint agreement.

Many New Companies

There has been an influx of new companies into the island, and 1936 saw the advent of the individual operator. The operations of such of these as there are have been characterized by a determination which augers well for an appreciable enlargement of operations through this medium.

Of the newer companies, Antilles Petroleum, a subsidiary of McColl-Frontenac, a refinery concern of Canada, can be cited as being a seemingly successful venture, and it is understood that this company has in the space of a few months built up quite an encouraging production in the Brighton area, which is in the neighborhood of the Pitch Lake.

Local interest in petroleum investments has also grown considerably and more and more capital is being diverted into this avenue in contrast to the times before when the bulk of investments was centered almost religiously on agricultural pursuits.

Heavier Equipment Stocks Carried

In contradistinction to this, however, it is surprising to note that in an island of the very limited size of Trinidad the native, taken as a whole, knows but little of the significance of the petroleum industry to the island. The paradox in this is given sharpness when one considers that the petroleum industry is virtually the mainstay of the island and provides a greater percentage of the total revenue of the colony than all the other industries put together, quite apart from the extensive amount of employment which the industry makes available to the native worker. It is the truth that the writer has had occasion to converse with people living within 40 miles of the oil fields who still thought that oil wells were "things that were dug with spades"!

The more ready availability of operat-

ing material and personnel on the island must also be remarked upon. Local warehouses are carrying larger and more comprehensive stocks to meet the pressing demands of enlarged operations. One can sooner see a driller temporarily out of employment but anticipating demand for him than see one that is not readily available locally as was the case oftentimes in years past.

Living camps have made great strides of progress and the standard of sanitation is very high all around. Whereas in previous years concentration was made only on the provision of adequate facilities, the new developments now find room for artistry and decoration, and the instances are numerous where the countryside has been beautified rather than destroyed through the medium of oil operating concerns.

Labor Conditions Are Settled

Labor conditions can be classed as settled and in direct contrast to the recent troubled situation in the neighboring republic of Venezuela. The Petroleum Association of Trinidad (constituted of the representatives of the larger operating companies) has set certain standards for the control and remuneration of labor, and so the native worker is, if nothing else, a peaceful and stable unit.

Industry Growing

Following figures for the period January to December 1936 give a concentrated picture of the achievements mentioned above:

	1934	1935	1936
Production of Crude Oil (in barrels)	10,894,363	11,671,224	13,237,030
Footage Drilled (feet)	351,783	436,299	594,534
Average Number of drilling rigs working	27	26	32
Average number of producing wells	906	974	1,041

Production for 1936 was 13.42 percent more than production for 1935, and production for December 1936 alone was 1,231,365 barrels . . . the highest local production recorded during any one month from the inception of the industry to the end of 1936. Production in 1936 makes the statement of oil produced in the island to the end of 1936 as follows:

	Barrels
Production previous to 1936	116,286,015
Plus 1936 production	13,237,030
	129,523,045

Trinidad Petroleum Development Company's No. 205 in the Palo Seco area attained the greatest depth during the year, being completed at 7610 feet. Trinidad Leaseholds and Apex have drilled to approximately 7000 feet in the Fyzabad area, and United British has carried one exploration well to over 6000 feet. There were approximately seven exploratory wells drilled by different operating companies over the island during the past year. The success or otherwise of these ventures is not as yet public information.

Technological Trends

In the matter of operating practices, Trinidad depends largely on the proven advances of the bigger foreign fields in order to make her own steps forward, but it is endeavored to give in the following paragraphs brief indications of the trend of progress in field problems.

The Diesel engine should find some popular application in Trinidad in the future, considering the big program of exploratory work to be undertaken where fuel and water supply may prove costly. It is not known that there is any conclusive local data on tests with this equipment, but its adoption for work in outside areas of the island is being watched with interest.

Mud Problems Numerous

Mud problems are numerous and loss of drilling fluid in depleted sands have caused trouble in different areas. In this respect it could be noted that sawdust has been used in some areas with appreciable results in combating this difficulty.

Electric coring is now the order of the day and in general application all over the island. Mechanical coring has been reduced to a minimum, being mainly used in order to obtain paleontological markers, the electric device being depended upon almost entirely for purposes of correlation. The teleclinometer has also come into use as a big advancement in the matter of measuring large hole deviations.

A wire line coring device has been found serviceable in the reduction in the number of round trips on the coring account, which makes for saving in expense and corresponding acceleration of drilling time.

Gun Perforating Practice

The gun perforating has been finding good and practical operation in local fields and may lead eventually to a new general departure in completion practices. It is understood that in the Cruse field blank casing has been run in on completion of the well and gun-perforated afterwards against the different sand bodies in convenient order.

The gun is also used for opening up previously shut-off formations in old wells and good jobs have been known to be achieved through two strings of casing with cement in between.

Fishing jobs have been generally less frequent during the past year and this could be taken as an indication of better all-round control in the fields. As far as is known, no cable tool drilling is done on the island today.

A plunger lift type of pump has found some success locally and its range of usefulness is being demonstrated by an increasing number of experimental outfits operating in various areas.

Repressuring is still practically the concern of one local organization. While it is believed that the general practicability and usefulness of such projects is accepted in some measure, it is considered that there is a lack of information on the economics of the proposition locally. Besides, there exists a considerable amount of faulting in some areas, which conditions cannot be considered as ideal for repressuring projects.

It is reported, however, that the repressuring operations of the company cited are considerable and that the margin of success is distinctly encouraging.

There are instances of local wells where two layers are being produced separately by means of two separate strings of tubing and a packer.

Conclusions

The year 1937 has already started to break the records just set by 1936 and production for the month of January was 1,263,456 barrels, a total of 32,091 barrels in excess of that for December 1936 which was cited above as the month of highest production since the inception of the industry.

There has been little abatement of the fervour for acquiring new rights and indications are that 1937 will be another bumper year for the local petroleum industry.

Importance of Price

It should not be forgotten, however, that while the Trinidad industry is now in a prosperous and progressive state, any appreciable decline in world prices would quickly have an unstabilizing effect on local conditions. It must be borne in mind that even at the best the yield per acre in Trinidad is comparatively low in relation to some other countries. If the pay sands in the new areas are found at commercial depths, operators should be able to look forward to an era of continued prosperity. All this depends of course on conditions in the open market in which Trinidad competes. A measure of preferential treatment for Trinidad oil in Great Britain would be the crowning touch to hard-earned achievements but as yet there is no news of a betterment of the poor fate with which this proposal has been met in the past.

San Fernando hill from Point-a-Pierre, Trinidad

Big Well Blows In

TURNER VALLEY TEST USES GAS COMPLETION METHOD

STERLING PACIFIC 4 of Royalite Oil Company, Limited, blew in March 21 showing indications of being the largest producer in Turner Valley, Alberta, Canada. No gauge of the green crude, which tested 42.5 degrees baume gravity was immediately taken and J. H. McLeod, Royalite Oil president, declined to make any estimates.

The method of bringing in the well commanded unusual interest from Turner Valley oil men. The tubing was connected to a gas pipe line run from Royalite Oil Company's absorption plant, the gas forced down the tubing and the rotary fluid was blown out by stages. The tubing was fitted with "kick of" valves at various stages which permitted the rotary mud to be blown off at intervals of several hundred feet. No oil or mud spattered the derrick. Located about 200 feet northwest of the Turner Valley Royalties test, Sterling Pacific 4, is 7184 feet deep, 468 feet in the lime.

Six miles northwest, Royalite Oil Company's Dalhousie 8, central west flank of Turner Valley, was drilling about 438 feet in the limestone, making fast time with oil instead of mud fluid. Completion was expected within a few days.

To Acidize Del Bonita Test

Sunshine Oil Company's Sunshine 1, wildcat, which made a good showing at 5252 feet on the Del Bonita structure last week, will be acidized in the expectation of increasing the flow. Equipment is being brought from the United States for this work.

With Plains Petroleum Company's wildcat on the Taber structure flowing an average of 76 barrels daily for the past six days, Homer Green, superintendent, announced that additional wells would be drilled on the company's acreage in this district. The well is down approximately 3250 feet. The well is yielding no water and the oil flow increases as it cleans itself.

Several Deep Ones Drilling

In South Turner Valley, the deepest wells (apart from the Dalhousie 8) are Richland 2 and Richland 3. Richland 2, located about 600 feet south of B. and B., is down slightly more than 4000 feet and preparations to run casing this week to 4000 feet were being made. After having run 10-inch casing, Richland 3 is drilling at more than 4600 feet. Oil was encountered in the McDougall-Segur sands and there is a quantity of gas. Directly between B. and B. and Turner Valley Royalties, Richland 1 is down 500 feet and was to resume drilling this week following the setting of casing.

Next deepest South Turner Valley tests are the Monarch well, the first of a series to be drilled on Okalta acreage, and the Mercury Royalties test. The Monarch well is down below 2,300 feet and is being drilled by the Anglo-Canadian Development and Holding Company, Limited, while the Mercury Royalties, also one of the Anglo-Canadian group, is down below 840 feet.

Negotiating for Acreage

A report that Royalite Oil Company was negotiating with Calgary & Edmonton Corporation with respect to the latter's acreage on the west flank of Turner Valley was confirmed by S. F. Heard, Royalite official. Heard refused to reveal the extent of the transaction, but oil men here believe it will result in a large development program in that territory.

Derrick is being erected for the Sunset Oils, Ltd.'s well in South Turner Valley, west of the Monarch well and west and slightly north of Foundation. It will be started with cable tools and completed with rotary equipment, according to officials. Clarence Snyder and Hilary Head will supervise drilling operations.

Deepest in Canada

An important conclusion is soon to be reached at the Arca well, deepest well in Canada. Drilling has been resumed after operations were halted at about 8,900 feet for several weeks for a long-time fishing job and severe weather conditions.

Two new wells have been spudded on the west flank of Turner Valley structure. Both started with cable tools. They are Davies Petroleum Company's No. 1, located on the Madison lease, southwest of the big B. & B. producer, and Sunburst 1, located in the north half of L. S. D. 1, Section 29.

WORLD CONGRESS

Second meet scheduled in Paris June 14 to 19

GEOLOGY, drilling, equipment, construction, economics, statistics, technique of utilization of petroleum products, physical chemistry and refining are among the more important general subjects to be discussed in the many papers to be presented before the Second World Petroleum Congress in Paris, June 14 to 19, inclusive.

The congress, sponsored by the French Association of Petroleum Technologists, will use French as the official language, according to Maurice Mercier, but papers may be submitted in English and German also.

The economic section will chiefly study the question of petroleum in the past and present and give a summary of the part played by the congress in assuring international relations with a common viewpoint, and unifying the information and standardizing the methods and terms used in the petroleum industry, which has great economic interest, both technical and commercial.

Standardization Prominent

The scope of technical standardization is wide, and many different problems are included. Several international organizations have already attempted standardization in the petroleum industry. In France the French Standardization Association has assumed this task. The co-ordination of national endeavor was decided upon at the First World Petroleum Congress held in London in the summer of 1933 and placed in the hands of a special committee which has already reached a general accord upon many points.

Measure Units Differ

Commercial standardization of the petroleum industry has not yet been achieved, and the leaders have not elaborated a code which will permit of international understanding. It is almost impossible now to make comparisons of figures upon petroleum data in various foreign countries. Units of measure, density and tonnage vary with each country. In the United States the unit is the 42-gallon barrel with a capacity of 159.19 liters. Each U. S. gallon contains 3.785 liters. In England the imperial barrel is the same size as the U. S. barrel but contains 35 imperial gallons. In France the metric system is used, but the customs are based upon weights and volumes, i. e., quintals and hectoliters. The specific gravity of the products is not indicated, and it is not possible to establish a common measure which will allow accurate addition. Even if densities were given, it would be difficult to make exact comparison because the methods of taking densities are varied. Roumania gives statistics on oil production in tank cars of 10 metric tons, and Mexico uses cubic meters, etc., Mercier states.

The same problems arise with questions of tonnage. Marine transport has a tendency to use the term tons without further explanation, although the net ton is about 40 percent less than the gross ton, etc. Special measurements of tonnage are used in both the Panama and Suez canals which are from 10 to 40 percent above the official tanker tonnage. The metric ton is 1000 kilograms and the long ton 1016 kilograms. There is no universal table at present which shows the relations between these different methods of measure. The metric system has been suggested as supplying the necessary common unit of understanding.

Costs to Be Studied

Questions of the costs of production and transportation will be considered in their many aspects, as well as the matter of tank storage. The commercial problem is very complex, and the composition of crude oil, with extreme variation in the quantities and value of the products, is one of the chief factors. Likewise, the customs and taxes add to the complexity. Many of these questions will be dealt with at the congress, Mercier declares.

Other items will include petroleum laws in various countries and the question of the limitation of production and its effect; the oil companies with government participation and government monopoly.

[*Continued from page 15*]

in those areas soon. Union Oil Company was active in geophysical work and in exploratory drilling. Barnsdall Oil Company obtained successful results in an aggressive pursuit of new reserves.

The results in developing reserves varied, of course, among different companies, some finding more and some less than they took from the ground during the year. The industry as a whole found somewhat less new oil in 1936 than it took from the ground.

Numerous Financial Developments

The annual reports indicated that considerable refinancing was done in 1936 by the oil companies, and revealed that further important financial developments are in prospect, particularly the issuance of new stock.

Skelly Oil Company reduced its fixed charges. Sunray Oil Corporation retired notes. Atlantic Refining Company stockholders authorized issuance of 4 percent preferred stock for retiring 5 percent debentures. Pure Oil Company reduced its long-term indebtedness and plans to eliminate such debt and to reduce preferential charges. Red Bank Oil Company's management indicated it may ask stockholders to authorize an increase in the company's common stock. Texas Gulf Producing Company stockholders likely will be asked to permit the directors to issue up to 50,000 shares of no par preferred stock, to acquire and develop new producing properties and to develop present properties further.

Since the oil industry in the future will be obliged to make substantial capital expenditures in its various divisions, to take care of heavy and expanding business volumes, comment on financing by the president of Sun Oil Company is pertinent. Said he:

"It has been the Sun Oil Company's policy to finance its capital requirements through issues of new stocks, rather than bonds. This method of financing has been generally followed throughout this industry; and at this time, when the country is emerging from depression, it does not seem inappropriate to note that experience has emphatically justified this policy. Having no heavy burden of fixed charges hanging over it, the oil industry has been able even in the most troublous years to take care of itself with few resorts to either the bankruptcy courts or the government's loaning agencies. Excessive fixed debts have been responsible for much of the financial grief of depression years. The oil industry's financing methods might well be commended for consideration in other fields of enterprise in future periods of industrial expansion. The policy would greatly lessen the stresses in times of financial difficulty."

The nature of the oil industry's operations are such, of course, as to make long term borrowing less imperative for the established oil companies than for the concerns engaged in some other activities. The oil company or operator with crude production constantly is converting property into cash and reinvesting part of the cash in new producing properties. However, this cycle has been lengthened in recent years, under proration, and a longer time is required than previously for a well or lease to "pay out." Consequently, some companies with producing properties restricted by proration or unitization must be concerned with maintaining or obtaining adequate capital for keeping their producing, refining, and marketing facilities modernized and commensurate with the growing consumption of oils.

The oil company reports show that capital expenditures were substantial in 1936 in all divisions of the industry and that heavy spending of that kind is contemplated for the next few years.

Companies that made and will continue to make important capital expenditures in the refining divisions include Atlantic Refining Company, Standard Oil Company of Ohio, Union Oil Company of California, Sun Oil Company, Phillips Petroleum Company, The Pure Oil Company, and others.

Companies that indicated they spent and propose to spend substantial sums on marketing facilities included Sun Oil Company, Phillips Petroleum Company, Standard Oil Company of Ohio, and others. The Pure Oil Company revealed it is endeavoring to increase volume through existing outlets as opposed to taking on or building additional facilities. Skelly Oil Company reported that a growing feature of its business is the sale of automobile tires, batteries, and accessories.

Labor Situation Discussed

Threatened strikes and the recent increases in salaries and wages for some workers in the oil industry make timely the subject of labor, and some of the annual reports embody comment on it. The Phillips Petroleum Company report, for example, included this statement:

"The company has contributed to the general recovery and relief of unemployment by adding to the number of its employes and by increasing wages whenever conditions have permitted.

"The average wage rates paid to employes in the operating divisions of the petroleum industry, according to latest Department of Labor statistics available, are 31 percent higher than the average rates paid to employes engaged in comparable work in all manufacturing industries. Rates paid by the (Phillips) company are comparable with those paid in the industry throughout the area in which it operates. The management is continually studying the relationship of stockholder and employe in an effort equitably to serve both."

Rising Taxes Decried

Nearly all the reports embodied protests against the heavy and increasing tax burden carried by the oil and automotive industries and the motorists. Figures were cited in many cases showing that taxes were alarmingly higher in 1936 than in the previous year. The Pure Oil Company report embodied a typical comment on the rising taxes, saying, "The tax burden in the last year was unusually onerous. . . . The problem is one which has to be met in all business operations, but the discriminatory assessments . . . upon the oil business and the allied automotive industry should be a matter of concern to all who have invested their money in these enterprises, as well as to the general public." The Phillips Petroleum Company report, in similar vein, stated: "The oil industry carries an altogether unfair part of the load . . . These conditions will continue until the stockholders, who own the industry and therefore pay the taxes, make a complaint strong enough to impress their legislative representatives."

Several Extensions

TWO FITTS SANDS ENLARGED AND AIRPORT CARRIED SOUTH

WEEKLY STAFF REPORT

Tulsa.—Highlights of activity last week were the extension to the west of the Fitts field of Pontotoc County, a big Hunton lime well in the field and an extension to the south of the new Airport pool of Tulsa County.

The extension well at Fitts was Burke-Greis Oil Company's Chambers 6, SW NW NW 32-2n-6e, which was tested through perforated casing between 3680 and 3925 feet. The well was originally drilled to 4830 feet and plugged back to 3965 feet where casing was perforated. It was cleaned out and made 182 barrels of oil the first hour and 160 barrels of oil the second hour, and was shut in for further testing. The well is southeast of Bromide sand production. Skelly Oil Company's Smith 1, NEc 35-2n-6e, is the nearest producer in that formation.

Skelly Oil Company's Metropolitan Life Insurance Company 1-B, SE NE SW 23-2n-7e, gave the Hunton lime play an extension. It based the lime at 4038 feet and stopped at 4040 feet in shale, flowing 361 barrels of oil the first hour and 345 barrels of oil the second hour with about 8,000,000 cubic feet of gas. It was shut in to be acidized. It is a southeast diagonal offset to J. Paul Getty, Inc. and Minnehoma Oil & Gas Company's Masters 1, which had a potential of 6276 barrels of oil a day.

Airport Field Extended

Latest producer and extensioner in the Airport pool, some eight miles northeast of the city of Tulsa, is Marrs and Hoss' Ricker 1, near NE SW SE 35-20n-13e. The well had 13 feet of sand between 1027 and 1040 feet, and was being cleaned out following a 70-quart shot. The well will probably be completed for from 25 to 35 barrels daily on pumps but at last reports the well was fishing with the bailer lost in the hole.

Fitts Wells Take Potentials

Other producers were given the usual good potentials in the Fitts field. Sinclair Prairie Oil Company's Wooley 18-A, NW SW SW 22-2n-7e, came in early last week as one of the largest wells in the field, flowing 215 barrels of oil the first hour through tubing and 616 barrels the second hour through casing, after being acidized in the Hunton lime with 12,000 gallons. It later established a potential of 4030 barrels of oil and had 2,000,000 cubic feet of gas.

Phillips Petroleum Company's Bates 3, NW NE NW 22-2n-7e, drilled to 3812 feet in the Hunton lime and was acidized with 1000 gallons. It flowed 127 barrels of oil in 12 minutes, and 263 barrels of oil in 30 minutes, both through casing, and was shut in for potential.

Sinclair Prairie Oil Company's Wooley 14-B, NW SE SW 22-2n-7e, drilled to 4223 feet in the Bromide sand and was acidized with 15,000 gallons. The well made a potential of 2592 barrels of oil and 3,600,000 cubic feet of gas. Magnolia Petroleum Company's George Smith 5, NE SE NW 28-2n-7e, made a potential of 3324 barrels of oil and 3,000,000 cubic feet of gas. It produced from the Hunton lime at 3550 feet.

E. H. Moore's Mack 1-A SW NW SE 28-2n-7e, topped the Cromwell sand at 2510 feet and tested at 2624 feet. The well made one flow of one-fifth of a barrel in one hour. It was drilled ahead and topped the Pennsylvania Caney shale at 2620 feet. Drilling was going ahead below 2697 feet.

E. H. Moore's Woodruff 5-B, NEc SE 29-2n-7e, drilled to 3530 feet in the Hunton lime and was acidized with 10,000 gallons. The well then flowed 179 barrels of oil in 30 minutes through casing. Gas was estimated at 4,000,000 cubic feet. It was shut in for potential.

Sinclair Prairie Oil Company's Wooley 19, SE NW SW 22-2n-7e, drilled to 3690 feet and was acidized with 12,000 gallons. The well flowed 95 barrels of oil in one hour through tubing and flowed 226 barrels of oil the second hour through casing. It was shut in for potential.

E. H. Moore's Muse 1, SW NE SE 33-2n-7e, south of production and across the fault, drilled to 5253 feet and plugged back to 4570 feet. The crew was pulling drill pipe and preparing to test in the Viola and Hunton limes.

E. F. Jones' Hooker 1, NWc 1-8n-5e, extended the Mission pool of Seminole County to the north last week when it swabbed 400 barrels of oil in 24 hours after acidizing the Hunton lime at 4027 feet. J. E. Crosbie's Harjo 1, NE NW NE 35-10n-7e, defined the west edge of the North Bethel pool of the county last week when it found water in the Wilcox sand from 4570 to 4576 feet. It was to be abandoned.

Sinclair Prairie Oil Company's Letka 1, SEc NW 35-11n-5e, in the North Earlsboro pool of Seminole County, plugged back to 4497 feet from 4628 feet, where salt water mud and black oil were recovered in Simpson Dense lime. After plugging back, the well swabbed 70 barrels of oil in 11 hours from the Hunton lime.

Lynch's Doner 1, SWc NE 25-5n-5e, in the Wetley pool, was shot between 2500 and 2567 feet with a perforating gun and flowed 85 barrels of oil in two hours by heads. The well also swabbed 85 barrels of oil in eight hours, following which pipe was set on top of the Viola lime at around 2695 feet.

Sinclair Prairie Oil Company's Rosanna 1, NWc SW 28-10n-8e, south of the Cromwell pool of Seminole County, topped the Cromwell sand at 3397 feet, set seven-inch casing at 3368 feet and drilled the plug. The well was then drilled to 3421 feet where it had a show of oil and was to bail. Tanks were being erected and the well was last reported drilling ahead below 3700 feet.

Swab Bebee Extension Well

W. A. Delaney's Starrett 1, SW SE NE 21-5n-5e, the well which extended the Bebee pool of Pontotoc County to the northeast, swabbed 75 barrels of oil daily from the Viola lime. It was to be shot. Delaney was starting two more tests in the area. Starrett 2 at NE NW SE 21-5n-5e and Ivey 1, NE SW SW 21-5n-5e, both of which were digging cellar.

Skelly Oil Company's Spear 1, SEc NE 20-17n-3e, in the area south of Perkins in Lincoln County, showed 50,000,000 cubic feet of gas in the Simpson sand and a spray of oil. The well was making 170 barrels of oil a day after acidizing in the first Wilcox sand and drilling to 4583 feet in the second Wilcox. It was plugging back to 4602 feet.

Skelly's Sporn 1, NW NE SW 21-17n-3e, southeast of Perkins, drilled to 4656 feet in the second Wilcox sand and flowed 18 barrels of oil per hour by heads and made 500,000 cubic feet of gas.

Continental Oil Company's Helms 1-A, NW SW SE 2-1n-7e, in the Jesse pool of Pontotoc County, drilled to 4564 feet in the Bromide sand and was acidized with 5000 gallons, following which it established a potential of 115 barrels of oil and had 2,000,000 cubic feet of gas.

Sun Oil Company's Arrowyne 1, NE SW SE 35-15n-2e, north of Wellston in Lincoln County, drilled in Wilcox sand from 5088 to 5093 feet and drilled plugs. The crew started swabbing and the hole filled with oil. There is a possibility the well may open a new producing area, although no definite statement was made by operators in the area.

Winona Oil & Gas Company et al's Harjo 1, SW SE NW 20-7n-8e, in the West Holdenville area of Hughes County, drilled to 2932 feet in the Booch sand and swabbed 12 barrels of oil per hour. The crew was cleaning out to the bottom.

TUSSY WELL BURNS

Ardmore.—Wrightsmith Oil Company's Yates 3, SE NW SW 33-1n-3w, in the North Tussy area of Garvin County, caught fire. The crew had about 10 feet of core coming out of the hole when a puff of gas ignited, burning the derrick. Floyd Kinley, well known oil well fire fighter, was immediately summoned to the scene.

Activity was less spectacular in other parts of the sector. Cox & Hamon's Harris 1, SEc NW 32-1n-3w, was making 10,000,000 cubic feet of gas and about 50 barrels of oil daily from sand had between 1590 and 1930 feet. It had been drilled to 2996 feet, but was dry and was plugged back to 1930. It extends the pool one location north.

Sinclair Prairie Oil Company's Stockton 1, SEc SW 26-6s-2w, in the Oswalt area of Love County, was fishing for 315 feet of tubing lost in the hole.

Carter Oil Company's Robertson 1, C SW SW 2-9n-25w, north of Erick in Beckham County, western Oklahoma, was completed at 3997 feet as a gas

TEXAS DRILLED 54%

of all U. S. WELLS in 1936

(See Oil Weekly, Jan. 11, 1937, Page 10)

Here in Texas, where more than one-half of the entire nation's drilling activity was centered in 1936, the Oil Industry's Key Men from around the world will gather for one week this fall to study and select equipment necessary for their coming year's operations.

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IL-WORLD EXPOSITON

HOUSTON, OCT. 11-16, 1937

well for a production of 6,000,000 cubic feet.

Meanwhile, Carter Oil Company et al were still attempting to make a well of Harley Community 1, C NE NE 24-2s-4w, south of the shallow Milroy field of Stephens County, and 4 miles west and north of the Fox field of Carter County. More than 10 days ago, the well had broken sand from 3736 to 3759 feet, but failed to get a test. A fairly good show was reported at the latter depth, a core coming from 3746 to 3758 bearing a considerable trace of oil. Drilling was being carried ahead in shale at 4088 feet.

41 COMPLETIONS

Tulsa.—Oklahoma operators completed 41 wells during the past week, 25 being oilers with a total initial production of 55,114 barrels. Three gas wells were completed with a total gauge of 9,000,000 cubic feet. Eleven tries were dry holes at completion, and 2 locations were abandoned.

There were 71 reports for the same period, to reflect a definite increase in activity. Pontotoc County, having led the state in interest during the last 12 months, continued to show steady progress with 14 new locations announced. Osage County made 12 reports, Seminole County 10, Creek County 9, and Okfuskee County 7, in order. Two reports each were received from Carter, Comanche, Jefferson, Kay, Lincoln and Oklahoma counties, and 1 report each from Grady, Harmon, Kiowa, Muskogee, Payne, Pottawatomie and Tulsa counties.

Langston Extended

WELL HALF MILE EAST BIG PRODUCER WHILE CHOKED

Oklahoma City.—Most interesting and profitable news from this portion of Oklahoma last week was that the old Langston pool of Logan County had been extended to the east. The extension well was Eason Oil Company and Transwestern Oil Company's Smith 1, SW NW NW 13-17n-1w, northeast of Guthrie and one-half mile to the east of the Langston pool proper.

The well flowed 420 barrels of oil in two hours and 20 minutes after topping the Wilcox sand at 5112 feet and drilling to 5128 feet. While the well flowed, 2100 feet of drill pipe was in the hole. It also produced an estimated 5,000,000 cubic feet of gas. Late the previous week, the well had to be shut in as it attempted to flow while operators were removing drill pipe. Following removal of the drill pipe, the well flowed 456 barrels of oil the first hour; 425 the second hour; 409 the third hour; 425 the fourth hour; 320 barrels the fifth hour; 362 barrels the sixth hour and 386 barrels the seventh hour, with 100 barrels of oil flowing during the last 15 minutes. Flow with drill pipe in the hole was estimated at 2231 barrels of oil.

Several new tests are planned for the area as a result of the revival. Ohio Oil Company made location for Knight 1, SE NE SW 12-17n-1w, three-fourths of a mile to the northeast of Smith 1, and had cellar and pits dug. Stanolind Oil & Gas Company and Amerada Petroleum Corporation staked location for Faust 2, SE NE NE 14-17n-1w, an offset to the west. Eason Oil Company had spudded another test in the immediate area, its Sisters of the Blessed Sacrament 1, SWc 24-17n-1w, on church land, and one and three-quarters of a mile to the south of the new producer. Continental Oil Company is also reported contemplating a test which would be Langston University 1, NEc SE 14-17n-1w, only one-quarter mile south of Smith 1.

Later in the week the new producer was still flowing at a high rate. It produced 2734 barrels of oil in seven hours March 23, and the morning of March 24 flowed another 2734 barrels of oil in 13 hours through one-inch choke. Last minute reports state the well flowed 4648 barrels of oil in 22 hours and 15 minutes through a one-inch choke.

Many oil men favor the new well as the No. 1 strike for Oklahoma during 1937, and see two other counties, Lincoln and Payne, sharing in the benefits of the extensive drilling play which seems to have started. Three old wells, on the edge of the pool, are the only producing wells in the area.

Extend Moore Field

Anderson Prichard Oil Company's State 2, NE SW SE 16-10n-2w, extended Moore pool of Cleveland County one location north March 25, putting 354 barrels oil in the tanks and about 150 barrels into pits the first hour of a pinched back flow. It flowed 397 barrels into tanks and 150 barrels into the pit during the second hour. Field men estimate the well is good for 500 to 1000 barrels hourly on open flow. Gas was gauged at 101,700,000 cubic feet. State 2 had top of the Wilcox sand at 7202 feet, 10 feet higher than State 1, and drilled ahead to 7262 feet. State 1, originally completed for 300,000,000 cubic feet of gas, was later turned into an oil producer.

In the North Lucien pool of Noble County, Shell Petroleum Corporation et al's Guthrie 1, CNW SW 31-21n-2w, topped the second Wilcox sand at 5443 feet and cored from 5497 to 5500 feet. Recovery consisted of three feet of sand, the bottom two feet being salty. Water, which was below 5100 feet with a scum of oil on top, could not be lowered.

On the Garfield County side of the pool, the same interests' Tate 1, SEc NE 36-21n-3w, found top of the Wilcox sand at 5356 feet, and from 5356 to 5359 feet, found salt water with a scum of oil in the Wilcox sand.

Champlin Refining Company's Pfeiffer 2, CN½ N½ NW 4-19n-2w, in the Lucien pool of Logan County, had the second Wilcox sand at 4920 feet and drilled to 4943 feet where it produced 175 barrels of oil in the last 24 hours.

In the Noble County portion of the field, Shell Petroleum Corporation completed Moelling 1, CSW SW 17-20n-2w, for 2494 barrels of oil from 5389 feet in the Wilcox sand. Two offsets to the well have been dry and abandoned.

OKLAHOMA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARTER COUNTY—		
Skelly, T. Miller 2, nw nw ne 5-1s-3w	85	2832
Roy Johnson, Davis 18, se se nw 6-4s-3w	*	1180
CLEVELAND COUNTY—		
Sinclair Prairie, Rice "A" 2, se ne ne 28-10n-2w ....¶53¾ &	26,610	7276
COAL COUNTY—		
Continental, Cleveland 1, nw sw ne 26-1n-8e	*	1428
CREEK COUNTY—		
Turner et al, Pope 3, cel ne se 1-16n-11e	3	1827
McBride, W. Starr 26, sw se se 8-18n-7e (otd 2549) (pb 2595)	5	2666
Indo Oil et al, Burgess 1, ne se se 25-18n-10e	¶3	1755
Gregg Sawyer, Jackson 1, ne ne se 14-19n-9e	16	1327
Big Four Pet., Evans 3, nw nw se 31-19n-9e	*	2557
HUGHES COUNTY—		
Mid-Continent, Winters 1, cnw se 4-8n-10e	¶3	3113
KAY COUNTY—		
Ritz Oil, State 1, nw ne sw 16-29n-2w	*	4449
LOGAN COUNTY—		
Carter & Gulf, Walker 4, se nw ne 33-17n-4w ....¶34¾ &	9229	6300
MUSKOGEE COUNTY—		
Joe Paul, Monday 1, se se se 4-13n-16e	¶3	1754
Riverland O&G, Dean 2, csl se 28-14n-17w (otd 2110)	*	3134
Lyons et al, Bender 1-A, cel w½ se se 13-15n-17e	*	1299
OKFUSKEE COUNTY—		
Hays et al, Richardson 1, sw sw sw 12-10n-8e (otd 1210)	*	2019
Arkansas Royalty, Brooks 1, ne ne sw 18-10n-9e	175	1892
Fisher 6, se nw se 18-10n-9e	150	1913
Lynch et al, Thomas 6, cnl ne nw 30-14n-14e (otd 1342)	*	1965
OSAGE COUNTY—		
Midco Oil, 1-A, sw sw sw 17-22n-10e (otd 2000)	50	2037
Branstretter 4, sw se sw 28-22n-11w	95	2056
Bay Oil, 2, sw ne se 25-24n-7e	*	2880
Peters Pet. et al, 11, sw ne nw 32-24n-9e	30	1800
PAWNEE COUNTY—		
Forest Dev., Grisel 1, cnw ne 21-21n-5e	*	3275
Christie & Reynolds, Finley 5, sw ne nw 31-21n-9e	*	1134
PONTOTOC COUNTY—		
Campbell et al, Malloy 2, nw se nw 30-2n-4e	3	378
Fleetborn, Morin 6-A, nw se se 20-2n-7e ....¶4 &	4211	3919
Amerada, Wooley 6, se ne se 21-2n-7e ....¶1¾ &	1964	4374
Stahl Pet. et al, Dennis 8-B, nw sw sw 21-2n-7e	3294	3675
Skelly, Metropolitan Life 8, nw se sw 23-2n-7e (pb 3666) ....¶4¼ &	3870	3932
Continental, Holkum 3, ne nw ne 27-2n-7e	*	3540
Moore, Patrick 3-A, sw nw ne 31-2n-7e ....¶9 &	2530	4440
Moore, G. Smith 8, se ne nw 31-2n-7e (otd 4403) ....¶½ &	1458	4490
Delaney, Russell 1, se nw sw 7-4n-8e	10	2022
POTTAWATOMIE COUNTY—		
Tom Phillips, Breidenthal 1, cw½ ne ne 23-11n-6e (pb 4356)	58	4532
SEMINOLE COUNTY—		
Jones, Berry 1-A, sw nw nw 2-8n-5e (otd 4165)	64	4182
Amerada, Noble 2, nw se sw 25-10n-7e ....¶1 &	1092	3628
Winona O&G, Wolf 2, se sw se 18-7n-8e (otd 3260) (pb 3013)	30	3300
TILLMAN COUNTY—		
I. T. I. O., Hatler 1, csw ne 32-2s-17w (pb 4525)	78	5169

*Failures; †Junked; ¶Million cu. ft. gas.

Bloomer Extension

AND NEW ZONE AT DAVIDSON FEATURES OF LAST WEEK

WEEKLY STAFF REPORT

Wichita—The extension of the Bloomer pool into Ellsworth County; the finding of a new production zone in an old pool in Barton County, and producers in two rather new areas were features of drilling acitvity in Kansas as the past week ended. The return of cold weather brought a noticeable decrease in the feverish activity that started more than a week ago, but oil men are still making plans for extensive tests throughout the Sunflower state.

Gulf Oil Corporation's Mary Grizzell 1, SWc NW 21-17s-10w, extended production in the Bloomer pool of Barton County across the line into western Ellsworth County. The new producer filled 3000 feet with oil in three hours from the Siliceous lime at 3255 feet, and looks to be a big producer. The well was drilled three feet deeper and a swabbing test made, during which time the well made 437 barrels of oil in six hours from the Siliceous lime at 3259 feet. Tubing was being run preparatory to putting the well on pump.

Gulf's Mary Grizzell 2, NW SW NW 31-17s-10w, the second hit for the firm in the extension area, found the Siliceous lime at 3251 feet and cored to 3255 feet where good saturation was found. Rotary rig was on the grounds for Mary Grizzell 3, SWc NW NW 31-17s-10w

New Zone for Davidson

Sinclair Prairie Oil Company's Davidson 2, NW SE SE 4-16s-11w, appears to have opened a new oil producing zone in the old Davidson area of Barton County. The Gorham sand and conglomerate were found at 3316½ feet, following which the hole filled 500 feet with oil in eight hours. In 18 hours the oil had filled the hole 1000 feet. Davidson 2 was drilled to 3353½ feet in the conglomerate. Siliceous lime was not encountered. Operators later swabbed the well to the bottom and it filled at the rate of 100 feet an hour. The discovery well, two locations to the northwest, was completed as a small producer in the Siliceous lime some years ago.

An important wildcat, of the rankest sort, is being started in extreme western Kansas in Hamilton County. The test is William J. Sherry and Denver Producing and Refining Company's Porter 1, SWc NE 30-25s-41w, south of the town of Syracuse. The test is located on a structure which has been sub-surfaced, core-drilled and seismographed. It will be carried to the Wilcox sand. Nearest test to the wildcat was drilled in 1923 by Wood Oil Company and was located in Section 5-26s-41w. Oil men are keeping a very attentive eye on the well in the belief that "anything can happen; but we hope it's a producer."

Sinclair Prairie Oil Company's Collinson 1, SE NW SE 5-34s-3e, one-half mile north of the discovery producer in the Gueda Springs pool of Cowley County, flowed 178 barrels of oil natural and no water in 24 hours from the Bartlesville sand at 3316 feet. The hole was shot between 3290 and 3310 feet with 30 quarts, and the crew was cleaning out preparatory to shooting once more when casing collapsed. Casing will be swedged out and another shot given before another production test is made.

An important test well is being started by Sinclair Prairie Oil Company. It is Nett 1, NWc SE 32-26s-4w, four miles south of production in the Hilger pool of Reno County. The test is at the south end of what is known as the "Red Jaw" country, and is on record as an attempt to determine the trend of the pool to the southwest. It is seven and one-half miles north of Cheney and two miles from a small Viola lime producer drilled by Derby Oil Company, which was abandoned some months ago.

Hays Test a Good Well

Lario Oil & Gas Company's Cress 1, NEc 13-11s-17w, northeast of Hays in Ellis County, pumped 1208 barrels of oil natural in 14 hours from the Siliceous lime at 3298½ feet. The well looks to be good for more than 2000 barrels of oil daily at the present rate of production. It is thought acid treatment will materially aid in increasing the production.

Sinclair Prairie Oil Company has staked location for Romine 1, SWc 7-11s-16w, a northeast diagonal offset to Cress 1.

Wolf Creek Oil Company's Dreilling 1, SWc NW 4-12s-17w, in the Shutts pool of Ellis County, at 3527 feet in the Siliceous lime, averaged 50 barrels of oil for the first 15 hours opened. The well is a diagonal offset to the northeast of a producer drilled in the area by Phillips Petroleum Company and Skelly Oil Company. Wolf Creek has started operations at Bemis 1, SWc NW 4-12s-17w, as an offset to Dreilling 1.

Carter Oil Company's Staab 1, NWc 11-12s-18w, three locations south of production in the Walters pool, topped the Siliceous lime at 3615 feet, corrected, and was bottomed at 3621 feet after recovering a core saturated with oil. The test was last reported waiting on cement before drilling in.

Ohio Oil Company's Wood 1, NW NE NW 3-20s-10w, southeast of production in the Schartz sector of the Silica pool, in Rice County, and the largest field in Kansas, filled 1000 feet with fluid after topping the Siliceous lime and drilling to 3359 feet. It was preparing to test.

Reserve Development Company's Patton 1, SW NW NW 16-21s-7w, is a new producer in the Hauschild pool of Rice County. The well flowed 1004 barrels of oil in six hours from the Conglomerate before being shut in for pipe line connections. Production was coming from 3371 feet.

May Define Chase Field

Austin, Winkler & Koch's Leming 1, SWc NE 24-20s-10w, may define the southern producing edge of the Chase pool of Rice County. When last reported, the well was drilling at 3405 feet in the Siliceous lime with nothing showing. It probably will be abandoned after drilling a few more feet.

Empire Oil & Refining Company's Jordan 1, SWc NW 15-25s-14w, in the St. John area of Stafford County, received a potential of 2025 barrels of oil on a test of the Oswald lime at 3880 feet. The well is two miles northwest of Skelly Oil Company's Kipp 1, in the discovery area, where the first well made a potential of 1265 barrels of oil a day. Jordan 1 drilled to 4267 feet in the Siliceous lime and found salt water. It was later plugged back to 3880 feet. Top of the Oswald was found at 3640 feet, and the first pay in the formation was had from 3722 to 3727 feet.

An attempt to extend production to the south in the St. John pool is being made by Lario Oil & Gas Company's Morgan 3, CWL SE 23-24s-13w. The company recently extended production to the east in the same pool.

Barbara Oil Company's Holmes 1, SEc NE 15-33s-13w, southwest of production in the Medicine Lodge gas field of Barber County, was reported to have flowed 65 barrels of oil in 25 minutes from the Viola lime at 4847 feet when opened for a short time. Gas production was estimated at 10,000,000 cubic feet.

Skelly Oil Company's Boxberger 3, SW NW NE 33-13s-14w, in the Boxberger area of Russell County, western Kansas, had the Siliceous lime from 3279 to 3280 feet and pumped 932 barrels of oil in 18 hours on a potential test.

KANSAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Texas Co., A. T. Moran 5, sw se sw 25-17s-11w	648	3319
Hutchinson O&G, Wendel 1, ne ne ne 13-19s-11w	*	3378
Davis et al, Wm. Steckel 6, se ne se 1-20s-11w	1653	3284
I. T. I. O., Peter 2, ne se nw 24-20s-11w	1449	3253
Magnolia, Roetzel 3, nw sw ne 24-20s-11w	1419	3258
BUTLER COUNTY—		
Ramsey, Weibe 1, se sw nw 6-24s-6e	*	2630
DECATUR COUNTY—		
Winkler & Koch, Vessey 1, cnw se 26-3s-26w	*	4149
ELLIS COUNTY—		
British American, Bemis 4, sw sw sw 22-11s-17w	2949	3476
ELLSWORTH COUNTY—		
Carter et al, Anna 3, se ne se 27-17s-9w	1538	3159
GRANT COUNTY—		
Columbian Fuel, Gray 1, cse 3-29s-35w	¶4	2618
HARVEY COUNTY—		
Shaffer, Haury 2, cse se 11-23s-2w	1126	3969
Shaffer et al, Merwin 1, ne ne se 14-23s-2w	*	2969
Hipple et al's Morris 1, nw nw sw 30-23s-3w	560	3371

[*Continued on next page*]

[Continued from page 67]

Company, Well and Location	Init. Prod. Bbls.	Depth
McPHERSON COUNTY—		
H. & M. Drlg., Sellars 2, se nw ne 31-19s-1w	350	2983
RENO COUNTY—		
Ledo Oil, Neufeldt 3, se nw nw 12-23s-4w	497	3386
Shell, Welch "A" 4, nw nw sw 9-24s-4w	160	3400
Texas Co., S. Collins 9, cs½ s½ se 17-24s-4w	250	3377
Helmerich & Payne, Benson 1, ne ne ne 5-25s-6w	*	4195
Shell, M. Whipple 5, nw nw ne 15-26s-9w	5034	4140
RICE COUNTY—		
Skelly, Volkland 2, sw se nw 27-18s-10w	135	3186
Bradley Oil, Mitchell 4, nw se sw 32-19s-10w	1349	3309
Gulf Oil, Wendell 3, sw nw se 32-19s-10w	1160	3311
Phillips, Oberle 1, nw ne se 18-20s-10w	600	3295
Cromwell & Lewis, Hannenkratt 2, ne se sw 8-21s-7w	15	3362
Douglass O&G, Theede 3, nw sw sw 9-21s-7w	4124	3380
Westgate, Greenland Oil et al, Johnson 1, ne se ne 17-21s-7w	1899	3385
RUSH COUNTY—		
Schermerhorn Oil, Schroeder 2, cne 36-18s-16w (pb 3653)	267	3657
RUSSELL COUNTY—		
Central Pet., Rusch "A" 3, sw se sw 19-12s-15w	646	3080
Bridgeport, Mills "B" 3, sw se se 33-13s-15w	306	3330
Saco Oil, Guerney 2, ne sw sw 23-14s-14w (pb 2985)	635	3058
Empire, Crawford 13, sw ne sw 2-14s-15w	1128	3304
Hartman & Blair, Rouback 7, se se nw 2-14s-15w	2458	3312
W. I. Southern, Inc., Sellens Heirs "A" 6, sw se sw 30-15s-13w	2420	3266
Phillips Pet., Haffman 4, nw nw sw 31-15s-13w	2667	3311
Shell, Michaelis 7, se sw ne 31-15s-13w	2394	3324
Coralena Oil, Boomhower 7, sw ne nw 32-15s-13w	3279	3281
W. I. Southern, Inc., Neidens 2, se nw ne 32-15s-13w	2691	3336
SEDGWICK COUNTY—		
Max Reynolds, Rodgers 1, se ne ne 20-25s-1e	*	3370
STAFFORD COUNTY—		
Stanolind-Amerada, Garvis 1, sw sw ne 23-24s-13w	2252	4102
WOODSON COUNTY—		
Pure Oil, Peek 8, ne se se 20-23s-14e	80	1702
Marshall et al, Weide 1, se se sw 17-25s-14e	*	1560
Sheedy, Fulhage 1, cs½ nw se 27-25s-14e	*	1568

*Failures; †Junked; ¶Million cu. ft. gas.

Wichita. — Forty-three completions were reported from the Sunflower State for the past week. Operators brought in 33 oil wells with a total initial production of 48,138 barrels of crude. One gas well was completed that gauged 4,000,000 cubic feet of gas. Eight starts were failures, and 1 location was abandoned.

Scouts of the state reported 38 new locations were made the past week, Rice County leading with 8 reports, and Russell County trailing with 7. Five reports were received from Reno County, and 2 each from Barton, Ellis, Greenwood, Harvey and Stafford counties. Barber, Chautauqua, Coffey, Elk, Ellsworth, McPherson, Rooks and Sumner counties made 1 report each.

Shawnee, Okla.—Bids on 251 oil and gas leases were opened at the Indian Agency here March 23, and 23 of the tracts were awarded the bidders. Recent developments in the area caused P. M. Pilkington, representative of the United States Geological Survey, to reject seven of the bids, holding the prices were too low.

Production Extended

LEA COUNTY OPERATORS KEEP BUSY WHILE ALLOWABLE IS UP

WEEKLY STAFF REPORT

Hobbs.—Authorization of 26 new locations for Lea County the past week was accompanied by 18 oil completions. All of the new operations were credited to majors, including 12 for Gulf Oil Corporation in five separate areas.

Intensive drilling carried on in recent months in the Monument-Eunice lime area indicates that property owners are striving to drill all desirable locations while proration allowable remains at a comparatively high level. Upon completion of their efforts more attention will be given the lengthy sandy-lime belt in eastern Lea County, where comparatively small oil wells are frequently brought in as direct offsets to attractive producers.

Productive limits of the sandy-lime belt have been extended about five miles north by two outposts. The Texas Company, Ajax Drilling Company et al's J. P. Alexander 1, C lot 14, 5-21s-37e, about 1¾ miles northeast of production, hit oil and gas pay at 3705 feet, or 215 feet sub sea, and flowed by heads while fishing for tools. It is capable of making its maximum proration allowable from the top of the sandy-lime pay, according to an official of The Texas Company.

Continental Oil Company et al's J. M. Skaggs 1, C NE SE 24-20s-37e, gives promise of making a small oil producer after deepening to 3900 feet, or 345 feet sub sea. At 3880 feet the formation failed to take full injection of acid, although pressure was built up to 1500 pounds on the tubing and 1900 pounds on the casing.

Wildcat Fails

Jim W. Brown and Reynolds' Parcell-Conoco 1, eastern Lea County wildcat near the Texas border, has not qualified as a commercial oil producer, although it has been in process of completion since February 10. Owners used 3000 gallons of acid in lime at 4378 feet, or 805 feet sub-sea, resulting in several brief flows of fluid. The well later swabbed 7 barrels of fluid per hour before the swab line parted.

A. R. Eppenauer et al's F. B. Stuart-Amerada 1, NE NW NE 22-25s-37e, located nearly one mile from nearest oil production in the sandy-lime area to the east of Jal, proved up additional acreage with an average flow of 32 barrels per hour for five hours while drilling with cable tools under pressure to 3335 feet. It has an elevation of 3082 feet, and logged the top of sand at 3250 feet. The well flowed steady at 3315-25 feet.

Gulf Oil Corporation is starting operations on Geo. W. Shanan 1, C NW NE 33-25s-37e, and C. D. Woolworth 1, C NE SE 30-24s-37e. Repollo Oil Company has cellar dug for Frances Stuart 2-B, NE NE SE 10-25s-37e.

Two of the 13 new locations allotted the Monument area offset production on the north end and will be drilled by Tide Water Associated Oil Company and Gulf Oil Corporation. The latter is starting operations on Theo Anderson 6, C NE NE 17-20s-37e; Anderson 7, C SE NE 17-20s-37e, and J. W. Smith 2, C NE NE 34-19s-36e.

Completion of Gulf Oil Corporation's State 3-F, C NW SE 36-19s-36e, flowing 104 barrels oil per hour natural through open tubing at 3920 feet, resulted in Amerada Petroleum Corporation's assigning contracts for the drilling of offsets to the north and west. The latter also made location for W. P. Byrd 6, C SW SE 12-20s-36e.

Superior Oil Company of California's State 1-B, C NE SE 13-20s-36e, ½-mile west of nearest production in the south-

NEW MEXICO

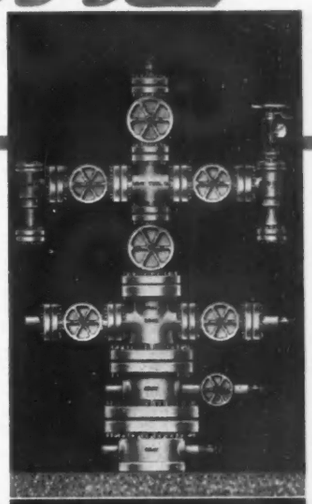
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field)—		
Amerada Pet. Corp., State 3-W, c se nw 30-20s-37e	1200	3852
Gulf Oil Corp., State-Orcutt 7-C, c sw se 36-20s-36e	1500	3846
State-Sunshine 3, c ne sw 30-20s-37e	84	3837
Humble, State-Aggies 11, c ne ne 31-20s-37e	300	3840
Repollo Oil Co., State 2-196, sw nw sw 32-20s-37e	150	3861
LEA COUNTY (Skelly-South Eunice Field)—		
Skelly Oil Co., Ellen Sims 2, c sw ne 3-23s-37e	480	3610
LEA COUNTY (East Jal Field)—		
Culbertson, Irwin & Stovall, J. R. Stuart-Repollo 2, nw se se 10-25s-37e	330	3421
Repollo Oil Co., Robt. Jamison 2, sw sw nw 22-24s-37e	243	3485
LEA COUNTY (Monument Field)—		
Amerada Pet. Corp., W. P. Byrd 3, c nw se 12-20s-36e	750	3875
Gulf Oil Corp., State-Graham 3-F, c nw se 36-19s-36e	3000	3920
Humble, M. E. Laughlin 4, c sw se 4-20s-37e	500	3878
Repollo Oil Co., Barber 6, sw ne se 7-20s-37e	600	3875
Shell, State 3-E, c sw ne 36-20s-36e	6000	3850
Skelly Oil Co., State 2-F, c sw se 17-20s-374	4500	3878
Van Etten 2, c sw sw 9-20s-37e	5000	3865
Superior Oil Co. (Cal.), State 1-B, c ne se 13-20s-36e	2500	3875
The Texas Co., Lee Cook 1, near c ne ne 32-19s-37e	600	3929
Tide Water Associated, State 2-I, c ne sw 16-20s-37e	500	3860
ROOSEVELT COUNTY—		
Franklin Oil Corp.-Flynn-Welch & Yates, Gephart 1, nw nw nw 28-3n-30e	*	5195

*Failures; †Junked; ¶Million cu. ft. gas.

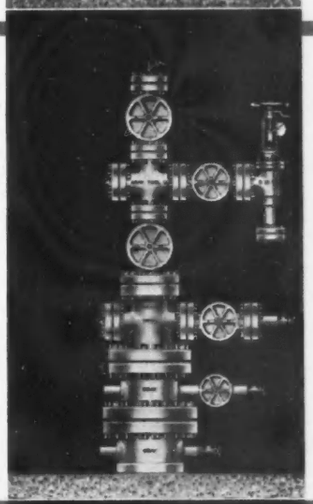
GRAY

VALVE REMOVAL *Under Pressure*



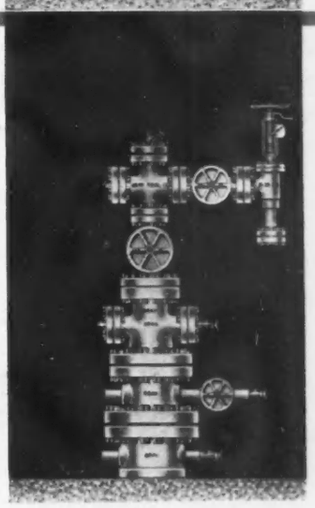
Control

Complete control for wildcat wells, bad sand cutting conditions, or where unusual conditions prevail or are expected.



Flexibility

After field conditions are known, excess valves and fittings may be removed and used on other wells. They may be re-installed at any time without killing the well and with the well under control.



Economy

As pressure decreases, only essential parts are left in structure. Parts removed may be used on other wells and in other fields. Worn parts may be replaced or repaired.

GRAY VALVE REMOVAL UNDER PRESSURE IS AVAILABLE IN ANY GRAY SYSTEM OF WELL CONTROL

No. 9 OF A SERIES ON SYSTEMS OF WELL CONTROL

GRAY

TOOL COMPANY

HOUSTON – TEXAS

west portion of the Monument area, responded to treatment with 2000 gallons of acid with a flow of 229 barrels oil in 3 hours through ⅞-inch choke from lime at 3875 feet. It was drilled to 325 feet sub-sea, and will require the maximum number of offsets because of being on a 40-acre unit.

Skelly Oil Company was credited with two prolific completions. This concern's Van Etten 2, C SW SW 9-20s-37e, flowed 198 barrels the first hour and 180 barrels oil the second hour on open tubing gauge from lime at 3865 feet, or 328 feet sub-sea, and State 2-F, C SW SE 17-20s-37e, averaged 107 barrels per hour for four hours through open tubing at 3878 feet. The latter increased to 147 barrels per hour on the fourth hour. Humble Oil & Refining Company has started operations on State 3-F, C NW SW 17-20s-37e, and Laughlin 5, C NW SE 4-20s-37e.

Fraction unit spacing to match offset drainage was resorted to by Ohio Oil Company in spotting State-Hansen 1, C W½ NW NE 16-20s-37e, and State-Hansen 2, C W½ SW NE 16-20s-37e. Shell Petroleum Corporation's State 2-E, C NW NW 13-20s-36e, is a new operation.

The Texas Company's Lee Cook 1, near C NE NE 32-19s-37e, Monument Townsite area, gauged 198 barrels oil in 18 hours through ¾-inch choke after using acid twice in lime at 3790-3929 feet.

Tide Water Associated Oil Company's State 2-1, C NE SW 16-20s-37e, excluded water in plugging back from 3860 feet to 3850 feet, and landed tubing packer at 3840 feet. This east edge well flowed an average of 31 barrels per hour for 12 hours.

Gulf Oil Corporation, largest producer in New Mexico since taking the lead from Continental Oil Company et al in February, staked three locations on its State-Bell 320-acre tract, Section 36-20s-36e, in attempting to keep abreast of offsets, and has started operations on E. A. King 2, C NW NW 28-21s-37e, Ollie I. Boyd 1, C SW SW 23-22s-37e, and F. B. Davis 1, C NE NE 8-23s-37e.

TEXAS PANHANDLE

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
J. M. Huber Pet. Co., S. B. Burnett 6-R	¶24.3	2965
The Texas Co., Boney-Magnolia 6	739	3038
GRAY COUNTY—		
Stanolind, Binkley 3	580	3291
HUTCHINSON COUNTY—		
Barnsdall Oil Co., T. D. Lewis 4	1030	3012
W. H. Holmes & W. A. Lyall, W. A. Lyall 1	552	2740
Phillips Pet. Co., W. B. Haile 3	426	3082
Skelly Oil Co., E. E. Watkins 5	547	2950
Skelly & Henry L. Cabot, A. Yake 1, sec 2	¶15	3011
Turman Oil Co.-Plains Pet. Corp., Whittenburg 10-A	798	2858
WHEELER COUNTY—		
C. S. Allender & Heare, J. B. A. Harvey 1	*	2200
Alma Oil Co., Perkins-Cullum (Gulf) 3	*	2610
Skelly Oil Co., J. J. Perkins 1	308	2470

*Failures; †Junked; ¶Million cu. ft. gas.

Wildcats Showing

INDICATE SMALL PUMPING PRODUCTION IN PECOS COUNTY

WEEKLY STAFF REPORT

Midland, Texas.—Pecos County contributed two prospective wildcat oil producers from sandy-lime zone. Based on preliminary estimates, they will make small pumpers, and will not arouse a lease buying and drilling campaign. Albert H. Flaherty & Sons, Midland, bailed 1 barrel of oil per hour when J. C. Cunningham-Sun 1, NW NW SW H&GN Section 25, Block 11, 5½ miles southeast of Girven, logged saturation at 2244-2249 feet. It will be acidized.

This wildcat is 2 miles northwest of the Rowan-Tong area, which was uncovered in August, 1929, with a 2000-barrel natural producer at 1644 feet, followed by numbers of dry holes.

Landreth Production Corporation's Smith Peter 1, ½ mile south by west, and Independent Oil & Gas Company's J. W. Phelps 1, same distance southeast of the new prospect, were abandoned at 2335 feet and 2401 feet, respectively.

E. R. Minshall et al's J. B. Banker 1, C SW NW T&SL Section 25, Block 146, 3 miles northwest of Fort Stockton, is rated as a 25-barrel pumper after 90-quart nitro shot at 2971 feet. Banker 1 is credited with filling 1500 feet with oil from broken lime section at 2843-2965 feet before encountering sulphur water at 3005 feet, or 85 feet above sea level. It was plugged back to 2971 feet and excluded the water. This wildcat is about 7½ miles east of a depleted area uncovered in May, 1929, by Phillips Petroleum Company's Courtney-Pryor 1.

Interest in the north portion of the Permian Basin is centered upon The Texas Company et al's Bob Slaughter 1, southwestern Hockley County unitized prospect. A trace of sulphur gas was recorded in lime at 4814-18 feet, with an elevation of 3560 feet, but the log failed to record additional shows in drilling to 4900 feet.

In Cochran County, R. S. Bond, L. C. Harrison and E. Fogleson's Wm. Cameron test topped anhydrite at 2125 feet, and was drilling at 2700 feet.

Shell Petroleum Corporation's M. J. Mann 1, east offset to the discovery oil producer in the Seminole area, Gaines County, has resumed drilling after being delayed in cementing surface pipe. Landreth Production Corporation's Cobb 1, wildcat in southern Gaines County, was logging anhydrite and lime at 4690 feet. It has an elevation of 3252 feet, and is checking low on structure. Near the north line of the county, Amon G. Carter and Continental Oil Company's Wasson 1 has cemented surface pipe at 250 feet.

In Andrews County, Humble Oil & Refining Company's J. S. Means 1-B, about 3 miles southeast of production in the Means field, was drilling at 4895 feet, or 1737 feet sub-sea. It is considered eliminated as a prospective producer due to its relatively low structural position.

Sun Oil Company's J. S. Means 1-C, C NW NE Section 13, Block A-35, is a new operation for the Means field, which is controlled by Humble Oil & Refining Company, except for two wells held by Sun Oil Company and one by Shell Petroleum Corporation. Fuhrman Petroleum Corporation, discoverer of the Fuhrman field, Andrews County's second most important area, has assembled a 5700-acre drilling block in North Central part of Block A-42, PSL survey, and southwest of the Ogden-Deep Rock pool, and is negotiating for a test.

In northwestern Winkler County, York & Harper, Inc.'s Munson-Gunter 1, C NW NW Section 7, Block C, was drilling below 4000 feet, with an elevation of 3081 feet, and is credited with being low structurally. It is about 5½ miles northeast of the Keystone field.

In the Delaware Basin area, Grisham-Hunter Corporation's Montgomery 1-A, Reeves County wildcat, was drilling in anhydrite and lime at 3450 feet. It is near Toyah, and has an elevation of 2891 feet.

In the Mason pool, new strike for Loving County, Mason Oil Company's Minnie Kyle 3 was drilling near the 2000-foot level. It is a west offset to the company's discovery well, and Stanolind Oil & Gas Company is starting a south offset. Woodley Petroleum Company, Houston, is due to start operations shortly on its recently acquired protection acreage in the area. Mason Oil Company is providing a transportation outlet for the oil by constructing about 10 miles of 4-inch line to the south by west to Reeves County, where it will intercept Pasotex Pipe Line Company's trunk line and also the Santa Fe railroad.

D. J. Finley and A. W. Cherry, Midland, contracted to start a Delaware test within 30 days for lease on Section 24, Block 56, T&P Survey, TSP 1. Location will be slightly more than 1½ miles west of the discovery well.

Taylor Field Is Likely

A new high gravity oil pool for Taylor County and near the Callahan County line is likely to result from wildcat efforts of Laurel Dunn, Herman McAllister et al on the Minnie Bowles 160-acre tract, Section 28, Blind Asylum lands, about 5½

miles northeast of Abilene. The well filled 300 feet with oil in 12 hours from sandy-lime at 1750-51 feet. It has an elevation of 1773 feet. A nearby test drilled about 10 years ago showed free oil in this zone.

Kermit's Drilling Program

Aggressive drilling programs launched last fall on leases in the south portion of Sayre field (now officially designated Kermit field), Winkler County, are beginning to subside. Using 10-acre spacing, lease owners are winding up drilling operations on many tracts, with all locations covered. Veteran contractors have rated this area as one of the busiest spots to be observed, with a maximum of 8 rotary rigs operating continually on a single lease.

Gulf Oil Corporation is using the record number of rigs on its L. Daugherty 640-acre tract, which is surrounded by equally aggressive neighbors, but must complete 42 additional wells before all locations are covered.

Magnolia Petroleum Company is maintaining 6 active rotaries on its J. B. Walton 8000-acre leasehold, which is likely to be more than 50 percent productive.

Monday Oil Company and Bert Fields have only two remaining tests to complete out of a 16-well program on their Central State Bank (Abilene)-Conoco 160-acre lease.

Mid-Continent Petroleum Corporation has concluded its 16-well program on the Walton 160-acre tract, and likewise Humble Oil & Refining Company on its J. F. Howe 240-acre tract.

Sinclair Prairie Oil Company has only two remaining completions to record on its Walton B and C leases, embracing the east half of Section 24, before all 32 possible locations have been taken care of.

Winkler County Revived Again

Release of contractors' rigs from the drilled-up Kermit area has lessened the possibilities of a shortage of drilling equipment to meet the demand created by the re-occurring record number of new locations credited to the district each week. Other Winkler County areas are receiving an increase in drilling operations, while some of the contractors have arranged to invade active fields in Ward and Ector counties.

Atlantic Refining Company and Wahlenmaier Oil Company's Fred Leck 5-E, an inside location for Henderson field, Winkler County, gauged 125 barrels per hour average for 6 hours natural through open tubing from dolomite lime at 3070 feet.

A large volume of nitrogen and oxygen production encountered by Roy A. Westbrook et al's Great West Refining Company 1, Howard County wildcat on a refinery site about 5 miles east of Big Spring, while drilling with cable tools at 1460 feet, has failed to diminish sufficiently to attempt a shut-off. It blew in February 17 rated at 368,000,000 cubic feet daily, with a large volume of salt water and salt. Ten-inch pipe was being carried to cement on top of the first lime, and surface pipe was due to be pulled. The derrick was damaged when tools were hurled from the hole. Since neither string of pipe is secured, the owners cannot shut in the air flow for fear of a crater forming around the pipe. Volume of production recently dropped to about 30,000,000 feet daily, according to owners, but has since increased to about 60,000,000 feet, with salt water complicating the situation. During the early stages of development in West Texas a similar strike in Mitchell County could not be controlled, and the air well eventually cratered and bridged.

Semi-Wildcat Fails

Fleetborn Oil Corporation et al's Black Arrow Oil Company 1, NEc Section 13, Block 34, T-3-S, Glasscock County semi-wildcat, failed to make a producer when shot with 60 quarts

NORTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, J. J. Perkins 1-E, sec 47	*	1025
John Chambers et al, L. F. Wilson 1-A, sec 120	*	655
Golding & Cochran, B. R. Jeske 2-B, sec 6	120	1187
R. O. Harvey et al, R. Kinder 3, sec 69	*	1233
Sussex Oil Corp., T. B. Wilson 1, sec 9	*	1872
CLAY COUNTY—		
Bridwell Oil Co., Saner-Lomax 5	*	300
COOKE COUNTY—		
Mack Oil Co., C. F. Felderhoff 4	*	750
Ruble & Lowery, W. L. Dozier 1, blk 12	*	3602
Schermerhorn Oil Corp., F. J. Hess 9	32	880
The Texas Co., H. L. Dennis 10	53	1222
GRAYSON COUNTY—		
Red Wing Oil Co., J. C. Mulden 1	*	610
JACK COUNTY—		
Bennett Pet. Corp., W. J. Chambers 7	1000	2990
D. C. Clayton 6	286	3030
Cato Oil Co., J. A. Raley 3	459	3032
Cockburn & Boase, Inc., Byrson School Lot 1 (6-ac)	524	3036
Deep Oil Co., J. M. Bridwell 2	103	3085
Gillespie & Perren, L. J. Hester 1	40	3011
Hammon & Meredith, F. H. Rhodes 4	110	2384
Hanlon-Buchanan, Inc., E. M. Sampley 2	335	3023
Thos. D. Humphrey, M. B. Cook 3	40	3004
M. B. Cook 4	312	3002
G. T. Smith 1	436	2991
Josaline Prod. Co., R. H. Eatherly 5	494	3007
R. H. Eatherly 6	490	3001
Owenwood Oil Corp., S. M. Jones 1	256	3128
MONTAGUE COUNTY—		
Arco Oil Co., Mrs. M. Salmon 6-E	123	1652
Mrs. M. Salmon 7-E	107	1642
Bridwell Oil Co., S. F. Loy 4-B	137	1764
Edgar T. Hart et al, W. L. Davis 1	*	1180
Lesh & McCall, R. W. Cunningham 12-A	43	948
Sinclair Prairie & Gibson-Jennings, Inc., Holt 5	244	1679
WICHITA COUNTY—		
L. T. Burns et al, Waggoner Bros. 17, blk 15	5	1757
Fresno Oil Co., L. F. Ramming 23	15	1323
J. E. Keller et al, Waggoner Bros. 4, sec 11	*	559
King Oil Co., M. M. Stone 2-A	187	1636
Waggoner Est. 15-H	144	1940
W. B. Omohundro et al, C. H. Whittenbach 7, blk 303	25	2019
Panhandle Ref. Co., L. F. Ramming 3-K	10	1711
United Producers Co., J. T. Harrell 1, blk 9	*	1552
WILBARGER COUNTY—		
E. C. Lawson et al, Waggoner Est. 1-B, sec 103	18	1504
YOUNG COUNTY—		
Forber, McCallum & Johnson, G. P. Stewart 1	*	612
King Oil Co., C. W. Johnson 6-B	2	508
C. E. Knox et al, W. O. Worsham 2, sec 3412	21	2716
E. Lennington et al, M. K. Graham 1, sec 2	*	873
C. J. Mason et al, M. F. Wells 1, sec 206	*	785
Pitzer-West & Lion Oil Ref. Co., Norton (Dollins) 2, sec 615	1226	3910
S. H. Simmons et al, Simmons-Cox 1	*	576
The Texas Co., Mrs. R. A. Stephens 2, sec 1985	631	4083

*Failures; †Junked; ¶Million cu. ft. gas.

WEST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRANE COUNTY (Wildcat)—		
John I. Moore et al, T. C. Barnsley 1	*	6829
CRANE COUNTY (McCamey Field)—		
Enniscrane Prod. Corp., E. S. Hughes 2-A	489	2120
ECTOR COUNTY (Goldsmith Field)—		
Devonian Oil Co., C. Scharbauer 1-A	¶10 & 2000	4230
C. Scharbauer 1-A	3735	4212
C. Scharbauer 2-B	3830	4230
GLASSCOCK COUNTY—		
Conoco-Group 1 Oil Corp., Settles 26-S	545	1210
HOWARD COUNTY—		
Ennisbrook Oil Corp., Rhoton-Texas Ld. & Mtg. Co. 12	550	2804
JONES COUNTY—		
Fain McGaha Oil Corp., Claude Lewis 1	†	1565
T. J. Lotspeich 1	*	2325
R. B. Farris, L. Fikes & Ungren-Frazier, Guitar 5	324	1996
Hugh King, Jr.-Cortez Oil Co., J. W. Harris 1	*	2250
N. H. Martin & Son, N. H. Hayden 1	*	2547
Sandy Ridge Oil Corp., P. Jones 7	92	1944
Sinclair Prairie, B. King-Dorsey 3-B	1350	2209
B. King-Dorsey 4-B	1050	2219
PECOS COUNTY (Masterson Field)—		
A. R. Forester et al, Ed. Fromme 1	*	1723
PECOS COUNTY (Torborg Field)—		
Cardinal Oil Co., Tippett-Kirby 47-E	21	447
Paul Childress, Tr., Smith-Sinco 16	72	358
PECOS COUNTY (Pecos Valley Field)—		
D. J. Finley et al, Iowa Realty Trust-Sinclair 1	†	1006
UPTON COUNTY (McCamey Field)—		
Continental Oil Co., A. A. Reese 5	584	2737
Cordova Union Oil Corp., Fee 4-A, sec 19	234	2065
D. L. Hunter et al, J. W. Robbins 3	1057	2196
WARD COUNTY—		
Eastland Oil Co., Hathaway 6	7752	2649
FHE Oil Co. et al, L. Richter 5-C	2913	2966
Gulf Oil Corp., E. W. Estes 15	1240	2620
Hutchings 68	1096	2760
Hutchings 69	1217	2752
G. W. O'Brien 80	721	2759
Pat Hill et al, Clements-Sun 12	267	2326
F. G. Leidecker-G. H. Vaughn, H. Archenhold-Califonia 6-A	471	3051
A. E. Lynch et al, Himmell 2-B	420	2388
Richardson Oils, Inc., Hathaway 18	3272	2675
Sid Richardson-Frank Kelsey et al, O'Brien 14	377	3106
Rio Bravo Oil Co., D. Olcott 17	446	2453
WINKLER COUNTY (Emperor Field)—		
Phillips Pet. Co., F. P. McCabe 3	61	2948
WINKLER COUNTY (Henderson Field)—		
Atlantic Ref. Co.-Wahlenmaier Oil Co., Leck 5-E	5000	3070
WINKLER COUNTY (Kermit-Sayre Field)—		
Bert Fields et al, Oscar-Clapp-Pure 4	1904	3116
Humble, N. R. Colby 13-A	785	3015
N. R. Colby 8-C	563	3052
J. F. Howe 24	469	3010
Illinois Oil Co., Central State Bank (Abilene)-Conoco 9-B	432	3127
Central State Bank (Abilene)-Conoco 10-B	1312	3130
Magnolia, J. B. Walton 64	882	2992
J. B. Walton 66	1109	2977
Mid-Continent Pet. Corp., Walton 15	875	2960
Monday Oil Co.-Bert Fields, Central State Bank (Abilene)-Conoco 13	1092	2989
Central State Bank (Abilene)-Conoco 14	986	2993
Sayre Oil Co., J. F. Howe 6-C	116	2989
Shell Pet. Corp., Ida Hendrick 1-M	509	3090
Sinclair Prairie, Walton 16-B	1400	2975
WINKLER COUNTY (Keystone Field)—		
Amon G. Carter et al, Walton-Pure 5	473	3353
WINKLER COUNTY (Scarborough Field)—		
Magnolia, W. F. Scarborough 10	133	2982

*Failures; †Junked; ¶Million cu. ft. gas.

nitro in lime at 2696-2707 feet, with the hole bottomed at 2713 feet, or 51 feet below sea level. About 50 feet of free oil with drilling water was in evidence prior to the shot. It is slightly more than 1 mile west by south of Floyd C. Dodson et al's Carter 1, wildcat pumper at same sub-sea depth. A pronounced structure exists in this area, but the lime affords little saturation.

John I. Moore et al's Barnsley 1, southwestern Crane County Ordovician lime project about 5 miles southeast of nearest production in Sand Hills field, was abandoned as a failure in gray sandy lime at 6829 feet, elevation of 2472 feet. Top of Simpson lime series was logged at 6268 feet.

Gulf Oil Corporation's W. N. Waddell et al 4, third Ordovician test for the north end of Sand Hills structure, was drilling at 5492 feet, with Simpson lime production due near the 6200-foot level.

Three Active on Waddell-Judkins Trend

Production trend to the northwest of the Waddell field, Crane County, towards the Judkins field, Ector County, affords 3 active tests. Gulf Oil Corporation's University 1-B, near SW SW SE Section 11, Block 35, mudded off 500,000 feet of gas in lime at 3178-85 feet, and was drilling at 3200 feet. It is about 1 mile west of nearest Crane County production. Sinclair Prairie Oil Company's University 1-27, SE SE NW Section 12, about 1¼ miles west by north of the above outpost, was drilling at 2700 feet, and the same company's University 1-24, NE NE SW Section 13, was drilling at 2600 feet. Clark, Cooper & Smith's A. P. Jordan 1, NEc Section 12, Block B-22, PSL Survey, Crane County, about 3½ miles south of nearest production in Judkins field and on the same structure, pumped off after yielding 50 barrels oil in 12 hours. It is bottomed at 3750 feet, or 940 feet below sea level, and used acid twice after a nitro shot.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Hammond Oil Co., J. R. Holt 4 (40-ac)	120	3563
Humble, S. A. Plowman 48-A (228½-ac)	8400	3712
V. E. Kirkland et al, Green 2 (4-ac)	6500	3824
Lake Oil Co., T. E. Slaughter 2-B (5.97-ac)	300	3633
Magnolia, A. K. Perkins 10 (77.06-ac)	4000	3621
Manahan Oil Co., W. F. Neal-Shell 16 (109½-ac)	2000	3805
Stanolind, R. G. Mason 13 (108.24-ac)	1500	3616
Tide Water Associated, M. H. Hale 3-A (25.8-ac)	1200	3647
Geo. C. Walters et al, Cross-Ogio 4 (60-ac)	1000	3677
J. S. Wheless Oil Corp., I. J. Smith-Gulf 5 (101.7-ac)	8400	3686
Willard Oil Co., J. R. Alford 5 (21-ac)	3000	3654
J. H. Woods et al, D. Dickerson 2	†	3420
KILGORE AREA—		
L. W. Callender et al, W. B. Walker 18 (174.3-ac)	500	3590
Geier Bros.-F. B. Jackson, W. G. Williamson 5 (100-ac)	6500	3729
Gulf Oil Corp., C. Strong 18 (136.16-ac)	5000	3678
M. R. Terrell 10 (60.26-ac)	7800	3616
Humble, Dora Thomas 18 (59.05-ac)	5600	3596
Karona Oil Co., J. N. Peterson 6 (35-ac)	2800	3624
Shell, J. A. Knowles 10 (53.2-ac)	8800	3663
Sinclair Prairie, H. J. Thomas 8 (65.38-ac)	600	3721
Sun-Seaboard Oil Corp., M. T. Cole 44 (266.17-ac)	8000	3539
The Texas Co., J. M. Dickson 9 (88.4-ac)	6000	3594
Tide Water Associated, J. M. Blackman 17 (80.87-ac)	4000	3654
W. D. Lacy 14 (80-ac)	7000	3563
Welch & Sandler Oil Co., Barnett-Tidal 10 (107-ac)	90	3742
Wise-Jackson & Stanolind, Wash Dickey 3 (30-ac)	240	3678
LONGVIEW AREA—		
Barnsdall Oil Co., M. Adams 17 (102.65-ac)	8700	3576
O. R. Cooper et al, M. E. Florence 5 (41½-ac)	100	3751
Gilcrease Oil Co., A. Christian 9 (40-ac)	8500	3602
W. W. Lechner-G. E. Hubbard, J. B. Doby 5-A (17.65-ac)	10,000	3590
Margay Oil Co., R. Corbin 10 (55-ac)	10,500	3563
B. F. Phillips et al, H. Douphrate 1 (10-ac)	1500	3757
Sam Siegel et al, W. H. Read 1-A (1.93-ac)	2750	3677
Shell, Boston Moore 8 (47.73-ac)	9200	3596
Sinclair Prairie, W. H. York 17 (8645-ac)	4000	3557
Stanolind, J. C. McKinley 52-B (60.7-ac)	7200	3605
Sun Oil Co., J. C. McKinley 14 (82.3-ac)	7800	3668
Texfield Oil Co.-Hoosier & Malone, O. J. Phillips 3 (40-ac)	480	3729
O. J. Phillips 4 (40-ac)	480	3721
United E&W Oil Co., C. T. Shelton 7 (56.3-ac)	3600	3709
FRANKLIN COUNTY (Talco Field)—		
Humble, P. J. Dawson 2 (80.45-ac)	150	4351
W. O. Chenault et al, T. J. Sanders 1 (2-ac)	*	4374
HOPKINS COUNTY (Sulphur Bluff Field)—		
Empire O&R Co., J. E. Worsham 3 (150-ac)	500	4548
W. L. Goldston-Big State Oil Corp., H. J. Smith 5 (450-ac)	900	4549
F. D. Jones et al, S. B. Pierce-Gulf 8 (150-ac)	1500	4507
S. B. Pierce-Gulf 10 (150-ac)	1200	4521
TITUS COUNTY (Talco Field)—		
W. B. Hinton et al, Horgrove-McLean 2 (20.46-ac)	600	4316
Humble, J. W. Hargrove 1 (3.71-ac)	282	4333
A. P. King-Hughes 31 (1053.36-ac)	317	4326
CHEROKEE COUNTY—		
J. A. Sanders-Fensland Oil Co., J. W. Ware 1 (106-ac)	†	2708
CASS COUNTY (Rodessa)—		
Magnolia Pet. Co., Meda Green 13, Jas. Davenport sur	280	6056
Magnolia Pet. Co., Lewis & Wicks 4, Cass County Sch. sur	280	6090
Phillips Pet. Co., Farrier 7, Wm. R. Meyers sur	376	6087
Texas Company, W. M. Hall 8, Alex Archer sur	1300	6079
United Prod. Corp., J. H. Bewley A-2, H. Holbert sur	280	5995
Vaughn Prod. Co., Willis 2, SFIW sur	390	6005

*Failures; †Junked; ¶Million cu. ft. gas.

Try Lower Trinity

TALCO OPERATOR PLANS DRILLING TO DEEPER LEVEL

WEEKLY STAFF REPORT

Talco, Texas.—Exploration of the lower Trinity series within the Talco field is scheduled to be undertaken by Hollandsworth Drilling Company, Longview, et al on the Jim Morris 20-acre lease, bordering Talco townsite on the west. The above concern subleased the tract last summer from Atlantic Refining Company, and in November completed a pumping well in the Paluxy, or upper Trinity sand at 4164-4367 feet. A second and more prolific oil horizon is required by owners of wells on the ½-acre sites within the townsite to enjoy profitable operations. The proposed location is near the fault plane, and should be a decisive test for production in the lower Glen Rose lime and sand series.

J. Z. Werby et al's Sam Williams 1, located about 2¼ miles east of nearest production at Talco, failed to show oil or gas in drilling to the lower Glen Rose at 6214 feet, and was abandoned.

W. O. Chenault, Dallas, et al's T. J. Sanders 1, located on a 2-acre site in the C. Payne Survey, Franklin County, and opposite the northwest corner of the O. James Survey, failed to cut through the fault to the upthrow side and was abandoned in Georgetown lime at 4012-4374 feet.

Production at Peak

Production at Talco touched a new peak level averaging 22,756 barrels daily from 251 pumping and flowing wells during the week ending March 22. Humble Pipe Line Company is credited with having transported 12,987 barrels daily average for this period through its 8-inch carrier to Louisiana. The remainder was marketed with two local plants, else moved by tank cars or to storage.

Paluxy Asphalt Company, owned by Eugene Constantin and others, has made a test run on its local refinery for the railroad commission's proration staff. This plant will be given tenders, based on the following yields: gasoline 40 percent; fuel oil 51 percent; kerosene 5 percent; and 4 percent loss. This recovery is subject to revision.

Sulphur Bluff Activity

Sulphur Bluff field, Hopkins County, is destined to experience a drilling boom with the announcement of Walter L. Goldston and Big State Oil Corporation, joint owners of a 450-acre tract, and F. D. Jones, Dallas, et al, holding a 150-acre lease, planning to drill all available locations. Robt. D. Goodrich, Fort Worth, has started moving in materials to drill on the R. A. Logan 87½-acre lease, A. O. Wetmore Survey, about 7000 feet southwest of production. Location is 1610 feet from most southerly south line and 330 feet

HARD FORMATIONS YIELD TO ROLLER CUTTERS

IN UNDERREAMING—as in drilling—nothing can compete with a rolling cutter action for efficient results in hard formations! That's why the big swing among shrewd operators is to the GLOBE ROTARY UNDERREAMER for maximum efficiency and speed, for here's a tool that has:

DIAMOND-HARD ROLLER CUTTERS that give many times more cutting surface than any other type, and insure *full gauge hole* in even the hardest formations.

THREE POINT CONTACT WITH WALL that assures smoother running, less strain on drill pipe, and guarantees an *absolutely cylindrical hole.*

POSITIVE CUTTER EXPANSION that allows fluid to enter the drill pipe while running in the hole, but completely prevents mud pump circulation until reamer is tripped. Once expanded, the cutting position is maintained by combined spring action and weight of drill pipe, eliminating "beans" and other highly restricted passages that eat out and prevent proper functioning of the tool in the hole.

POSITIVE CUTTER RETRACTION that pulls cutters into the body when starting out of the hole and eliminates danger of "hanging up".

LARGER CIRCULATION PASSAGES (possible through not depending upon fluid pressure to maintain each cutting position) that give more circulation to each cutter, complete removal of cuttings from hole, and less *strain on pumps and circulating system.*

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from the east line. Russ Petroleum Company and W. L. Goldston, joint owners, have a 473.37-acre narrow tract adjoining on the east, and Sun Oil Company holds lease on a similar size tract to the east of the latter. The Texas Company has made location for a test to be drilled on its Bert W. Davis 300-acre strip lease abutting western most producing leases in the field.

Two lower Trinity wildcats are slated for Bowie County. Mrs. S. O. Thompson and Sunray Oil Company are moving in rotary to drill R. B. Rosemont 1, located 800 feet from north and 500 feet from east lines of lease, Jefferson Milam Survey.

Woodley & Bentley's J. D. Lumpkin 1, John McDermott Survey, about 1¼ miles southwest of Dalby Springs, will be deepened from 4404 feet, according to owners.

TO TEST TRINITY

Deep Long Lake project to determine productivity

Tyler, Texas.—Ability of the lower Trinity zone to produce under the Long Lake field, Anderson County, will be determined shortly. Tide Water Associated Oil Company and Seaboard Oil Corporation, owners of two gas and distillate wells in the Glen Rose lime section at Cayuga, are seeking production in the same formation in drilling Monnig Bros. 7, first Long Lake deep test. Coring operations were under way late last week at 8565 feet. Top of anhydrite was logged at 8413 feet, with an elevation of 233 feet.

Tom Hunter, American Liberty Oil Company et al's Gage 1, deep test for the Blackfoot geophysical prospect, Anderson County, were drilling at 7200 feet. Top of Georgetown lime was logged at 5384 feet and first Paulxy section at 6758 feet, with an elevation of 384 feet.

In Henderson County, Tide Water-Seaboard-Humble interests' McElreath and Suggett 1, Opelika area, was drilling below 5400 feet after topping Georgetown lime at 4990 feet, with an elevation of 392 feet. Pure Oil Company's W. B. Kendrick 16, Mexia deep project, was drilling at 405 feet.

Humble Oil & Refining Company's L. K. Riggs 1, northeast edge Van field deep test, cemented 13-inch pipe at 329 feet.

Placid Oil Company and Shell Petroleum Corporation's Elliott 1, Procella structure, Houston County, logged Pecan chalk at 4590-4557 feet and was drilling in shale at 5010 feet. It is seeking production in the Woodbine.

PRICE HEARING

Texas investigators will meet again on March 31

Austin.—The legislative price investigating committee will hold its next hearing on March 31, or April. This date was set last week when it was found that sufficient time had not been allowed for study of the record of the hearing held some three weeks ago.

Two hearings have been held. At the first independent operators presented evidence to show that prices paid for West Texas crude were too low. At the second hearing evidence was presented by major purchasers seeking to show that the prices were fair.

Lower Coast Busy

EXTENSIONS, DEEP SANDS, AND MANY WILDCAT SHOWS

SOUTH TEXAS

WEEKLY STAFF REPORT

Corpus Christi.—More field extensions, deeper sands in proven fields and wildcat showings were included in another unusually active week on the South Texas Gulf Coast. Included in the discoveries was the first lower Vicksburg or upper Jackson formation discovery in the prolific Nueces County area.

United Production Corporation's W. H. Harvey 1, ½-mile southwest of the Agua Dulce field, Nueces County, was coring below 7400 feet in salt water sand late in the week, headed to 8000 feet or deeper, unless production is encountered. It had an oil sand at 7382-96 feet, hard cap at 7396-98 feet and salt water sand below this depth. While no drill stem test was made on the sand, it was considered to have sufficient saturation to indicate a producer.

Is Deepest in Section

The test as well as being the deepest possible producer for this portion of the Gulf Coast, is of high importance due to the fact that it is likely in the basal portion of the Vicksburg or at the very top of the Jackson horizon. Several producers have been completed in the upper Vicksburg along this sector of the Gulf Coast, but thus far, none of them have been drilled into the lower phase, nor the top of the Jackson.

The above test is 1100 feet east and 1000 feet south of the most northwesterly corner of a 162.34-acre tract in the Garcia survey.

Several miles south of this well, the South Agua Dulce field has production in three sands ranging from 5750 to 6832 feet, in the lower Frio and possibly upper Vicksburg, although detail information is lacking. The deepest sand in this particular area was opened last year by Texon Royalty Company's C. D. Sevier 2, which blew out at 6832 feet, ran wild, cratered and caught fire. It has been running wild for nearly six months and a relief well is being drilled 800 feet to the north in an effort to kill the flow of gas and oil. This well drilled to 6350 feet, ran an electric formation tester and set casing. It will drill ahead immediately. Several outpost wells to this field have been commenced and exploration of its potentialities should shortly be known.

Recovers Gasoline on Test

Several miles to the east in the Clara Driscoll field, Wellington Oil Company's Sevier 14, Gamble Survey, recovered about 30 feet of gasoline and a like amount of mud with 350 pounds pressure on a 6-minute drill-stem test from 5425½-33 feet and set 5½-inch casing. The well opens an entirely new sand for the field, deepest thus far established in the area. Magnolia Petroleum Company's Sevier 2, cored sand at 5332-64 feet, and shale at 5364-72 feet, but it was dry. The Texas Company's Sevier 1, showed salt water in sand at 5431-37 feet and was abandoned.

A new producing horizon for the London field, Nueces County, appears possible with Gem Oil Company's M. L. Stockton 1, Section 25, and a southwest offset to the discovery, coring sand and shale from 4551-56 feet and sand 4556-63 feet. Two drill-stem tests failed and the test was being cored deeper before making a new test. Cosner & Cosner's M. L. Stockton 1, also an offset to the discovery, showed salt water when completion in the regular sand at 4700-19 feet was attempted. The water was believed to have been from a faulty cement job and the well was recemented. Several miles north of the field, Edwin M. Jones was progressing below 5492 feet in Cooke 1.

To the southwest, I. J. Allen and Seaboard Oil Corporation have commenced two wildcats in the Chapman Ranch area. J. O. Chapman 3 is 1320 feet east of Chapman 2, discovery well, and J. O. Chapman 1-B, NW SW Section 37, 1 mile northeast of the discovery, which was completed several days ago from 6460-67 feet flowing 125 barrels per day through ⅛-inch choke under pressures of 625 and 657 pounds on tubing and casing, respectively.

Saxet Production Extended

Donico Production Company's Donnigan 2, Section 7, Range 6, extended the 4800-foot production in the Saxet field more than 1,000 feet to the east when it developed 930 feet of pipe line oil under 25 pounds working pressure on a 12-minute drill-stem test at 4840-60 feet. The sand was topped at 4854 feet and casing set at 4840 feet. Despite the fact that the majority of the interest in the field now centers around the several sands between 5800 and 6900 feet, the work in the shallower horizons continues active, as is indicated by the above discovery.

McCampbell field, Aransas County, was given an extension of fully ½-mile to the east by Collins & Wilkerson's McCampbell 1, Lot 16, Block 10, which was cleaning into pits at last reports. It had sand at 6546-50 feet, shale to 6551 feet and sand to 6558 feet, being bottomed at 6560 feet in shale. Another important well in this field is Buckingham Oil Company and Edwin M. Jones' McCampbell 2-B, Lots 13 and 14, Block 40, which had practically all shale in the regular horizon and was going ahead at 7200 feet.

In San Patricio County, two wildcats

were in the center of the play, one being Phillips Petroleum Company's Henry Schmid 1, Section 81, 4 miles northwest of Gregory, which has started a leasing play of acreage bringing high prices. At last reports, the well was coring below 5359 feet in salt water sand. The record on the well follows: cored 5318-34 feet, apparently sand, but no recovery; cored again 5334-39 feet, very soft, no recovery, likely more sand; ran electric formation tester, reamed to 5316 feet, and ran drill-stem test, showed 425 pounds pressure, 100 feet oily mud in 7 minutes, reamed to 5332 feet, 3½-minute drill-stem test but seat gave away and recovered 3600 feet mud with salty taste, and cored ahead. This is a very tight well, and further details are lacking.

Eleanor Oil Company's J. F. Green Estate 1, Williamson Survey, on the Gregory Prospect in San Patricio County, encountered a sand section from 6573-96 feet, a drill-stem test at 6568-88 feet failing and another at 6573-96 showing mud and salt water. The well was deepened to 6638 feet and developed more salt water.

Victoria County Wildcats

In Victoria County, 3 wildcats were promising production late in the week. Magnolia Petroleum Company's Annie B. Wagner 1, 660 feet south of the discovery well of the Telferner field and in Survey 1, drilled to 4240 feet, ran an electric formation tester, plugged back and set casing at 2590 feet. It will perforate in a sandy shale and sand section between 2516-29½ feet, which showed oil odor in cores. A drill-stem test at 2415-31 developed 270 pounds gas pressure in five minutes.

Commonwealth Oil & Gas Company's W. H. Bennett 3, J. E. Galban Survey, 1 mile north of the Heyser field, cored 3 sands between 5415-72 feet and showed considerable oil saturation at 5462-72 feet, elevation being 54 feet derrick floor. It is bottomed at 5475 feet in shale. An electric formation tester has been run and a drill-stem test is being made. Should it develop production, it will extend the field across the Calhoun County line into Victoria County.

The other Victoria wildcat is Union Oil Company of California's Claude A. Keeran 3, M. de Leon Survey, ½-mile southeast of the Keeran field, which on a 10-minute drill stem test from 5695-5704 feet developed 1600 feet of pipe line oil and 65 pounds pressure. The well was cored ahead and another test was being run at last reports. This well has an elevation of 33 feet, ground.

Jackson Test Running High

Shell Petroleum Corporation's T. N. Mauritz 1-B, O. S. York Survey, 1,000 feet northeast of the only producer in the Mauritz field, Jackson County, cored an oil sand at 5645-52 feet, drilled to 5704 feet in shale and set casing on bottom. In the same county, but 5 miles southeast of Ganada, The Texas Company's T. N. Mauritz 1 was coring around 5,000 feet and reported to be logging high enough to be unusually interesting.

Jim Wells County had two wildcat failures, while another was testing a Frio sand. Arkansas Fuel Oil Company's Bierstadt 1, Reynolds survey, 1½ miles west of Orange Grove, was abandoned in sidetracked hole after redrilling a sand at 4798-4827 feet, which appeared promising as a result of an electric formation test. About ½-mile southwest of the Frio sand production in the Wade-Sandia field, J. E. Walsh abandoned Wade 1 around 4105 feet.

Graham Trying to Complete

Tom Graham's J. P. Luby Estate 2, Share 4, two miles southwest of the Bentonville-King area, Jim Wells County, was still attempting to complete through perforations at 5423-30 feet where the well is showing some oil. Southern Minerals Corporation's Richard King 1, Section 32, several miles northeast of the field in Nueces County, showed oil, gas and mud on drill-stem tests in sands at 4003-33 feet and 4217-24 feet and the test is drilling ahead.

Hiawatha Oil & Gas Company has let a contract to Rowan & Hope, Inc., and rig is being moved in to John Roemer Estate 1, Calhoun County, to deepen the test from 8378 feet to at least 9500 feet. A string of 8⅝-inch casing has been set at 5900 feet for protection. The well, located five miles northeast of Seadrift, has encountered a thick section of heaving shale and is supposed to be unusually high at this level. It is in the Frio.

Push Duval Work

COMPLETED SECOND AND THIRD SWEEDEN AREA WELLS

San Diego.—Further exploration of the eastern portion of Duval County apparently is the immediate follow-up to the recently discovered Cockfield production in the Sweeden field. This area received its second and third producers during the week, both being in the 5900-foot horizon.

Hiawatha Oil & Gas Company's George Herberger 1, east offset to the discovery, found the sand at 5862-91 feet, shale 5891-96 feet, the total depth, and set casing at 5862 feet. Plugs were drilled, and late in the week it was in final stages of completion. Oskness-Miller 1, south offset, flowed 135 barrels per day through ⅛-inch choke with 650 pounds tubing and 1040 pounds casing pressures, the sand being recorded at 5868-87 feet, with casing set atop the sand.

Frank Gravis' F. Vaello Puig, San Andres Grant, 4 miles northeast of the above field, was drilling at 4125 feet. Still farther north and near the Palangana salt dome, F. J. Gravis' Schallert 2-A, 660 feet east of 1-A, was rigged up, while Penn-Palangana Oil Company et al's C. K. Gravis 1, Section 245, 3 miles farther northeast, was also rigged up. E. R. Thomas Estate et al have rigged up and are ready to spud in Atlee Parr 1, SE SW Section 26, farther northeast and in an area where several shows have been obtained in the Jackson formation. In the extreme northeastern portion of the county, and 5 miles northeast of the Labbe field, Atlantic Refining Company encountered salt water in the Cole sand topped at 2168 feet, elevation 560 feet, and was drilling below 2370 feet in W. A. Lowe 1, Section 466.

Argo Oil Corporation has moved 1800 feet west of its recently discovered production south of the Hoffman field, also in Duval County, for V. Rodriguez 1, Section 498. The well was fishing at 2375 feet at last reports. This area promises to develop into a field in a sand lens just above the Government Wells horizon. Diamond Half Oil Company's J. F. Sinclair 1, Section 405, 5 miles southeast of Sarnosa field, was moving in, while H. F. Grimms' E. Mew 1, 8½ miles southeast of the Labbe field, and in Section 289, has spudded and set surface casing.

GUADALUPE TEST

Second Balcones show; much interest in area

San Antonio.—A second Edwards lime discovery for the month in the Balcones Fault zone appeared highly probable March 26, with Riddle Oil Company testing Ned Herff 1, 5 miles southeast of Seguin, Guadalupe County.

The well upon completion test swabbed sulphur water from Edwards lime and was being plugged back to complete in the upper horizons, which showed fairly good saturation.

Edwards lime was topped at 2184 feet and set casing at at that level after losing returns at 2185 feet.

The above test, located in the northeast corner of a 50-acre lease in the E. Gortari Survey. It topped the chalk at 1982 feet and had the base at 1988 feet. There were 59 feet of saturation in the chalk and 51 feet in the Buda lime. Elevation is 538 feet, derrick floor.

Branyon Well Flows

Lincoln Petroleum Company's F. M. Branyon 5-B, J. R. Miller Survey, discovery well of Edwards lime production in the Branyon field of Caldwell County, flowed and pumped 185 barrels of 38.2 gravity oil and 12 barrels of sulphur water per day. The test had been drilled to 2337 feet, 8 inches in the Edwards limestone, and set casing at 2228 feet. It was acidized with 320 gallons of acid, diluted with several hundred gallons of water. (See picture, page 9.)

Several other wildcats in Guadalupe and Caldwell counties were in process of completion to extend fields or open entirely new producing areas. W. J. Walton's P. K. Delany 1, 5 miles southeast of Seguin and in the J. Cantu Survey, Guadalupe County, topped the Austin chalk at 2020 feet and drilled to around 2275 feet, setting casing atop the chalk. It is about 2½ miles from the Zoboroski field.

Williamson County Boost

This shallow play received further impetus with the completion of a 502-

barrel per day producer in the Byersville field, Williamson County, by Taylor Refining Company. It is W. R. Heap 6-B, H. White Survey, which flowed under 300 pounds casing and no tubing pressure from Serpentine at 846-55 feet.

Diamond Half Oil Company apparently has cut the fault in E. Bibbs et al 1, J. Roberton Survey, deep test on the west side of the Darst Creek field in Guadalupe County, and is now drilling at 3618 feet in the Glen Rose limestone. It topped the Edwards lime at 2760 feet and the Glen Rose at 3241 feet, apparently a thin section. The test, one of the most important ever drilled along the fault zone, is headed to the Trinity sands, expected about 5500 feet.

Another Glen Rose test is holding considerable interest, being Amerada Petroleum Corporation's Halff & Oppenheimer 8, Pearsall field, Frio County. The test is drilling at 7695 feet, having topped that formation at 6992 feet.

WHEELER HEARING

Austin.—The hearing on the Wheeler County gas proration question has been reset by the Texas Railroad Commission for April 13 at Austin. The hearing had been scheduled originally for April 3.

This hearing will be of unusual importance because it is the first which the commission has held on gas since the U. S. Supreme Court held invalid the commission's order prorating gas in the Texas Panhandle.

Discovery Flows

STARR COUNTY TEST LIKELY YIELDING BASAL FRIO OIL

Mission.—G. E. Dodd Trustee's D. B. Wood Estate 1, newest discovery well in the shallow Starr County area, was flowing at the rate of 12 to 15 barrels of oil per hour through 3/16-inch choke at 1739-54 feet. It was still cleaning and had built up a casing pressure of only 125 pounds. Production likely is from basal Frio. Elevation is 290 feet, derrick floor.

The well is 1180 feet from the west line of Porcion 84 and 19,000 feet north of the Missouri Pacific Railroad. It is about 4 miles northeast of Rio Grande City and 1½ miles southeast of Ricaby shallow field.

Another Sand at Ricaby

Ricaby area was receiving a second sand with Moss & Heard completing S. B. Ricaby 3, Porcion 83, and one location east of the discovery well. The discovery sand is at 1300 feet, but the horizon cored in the new test is at 1604-11 feet. A drill stem test developed 230 pounds pressure and 20 feet of oil and mud in 9 minutes from 1602-11 feet, and casing was set at 1602 feet. Plugs have been drilled and the well is being tested.

About 9000 feet farther northwest, in Block 5, Share 5, Porcion 81, Clopton & Reed's Green et al 1, drilled to 4620 feet, plugged back and perforated at 1604-14 feet, where it mads gas for about 12 hours, then went to salt water. It encountered the Cole sand, top of the Jackson horizon, at 1593-1631 feet, the last five feet showing saturation. A drill stem test at 1610-28 feet showed 300 pounds gas pressure in 3 minutes with a little oily mud.

Three Structures Involved

While the three areas line up in a northwest-southeast trend, none of the above wildcats are believed to be on the same structure. The Green well is in the Jackson formation, while the other two producers likely are in the lower Frio. Some faulting between the wells also is indicated.

Deep drilling in the Rio Grande Valley holds attention, with more operations scheduled to depths ranging from 8000 to 11,000 feet.

Transwestern Oil Company et al's T. B. Slick Estate 2, Section 527, 12 miles northeast of Rio Grande City in Starr County, has set 1500 feet of 13⅜-inch casing preparatory to drilling to 8500 feet, probably through the Yegua formation. K. E. Merren's Starr County Cattle Company 1, Porcion 89, Barbacoas field, is to drill to at least 6000 feet, deepest test for this field.

A Willacy County deep operation is reported to be scheduled to 11,000 feet on a core project. It is Shell Petroleum Corporation's Yturria et al 1, at La Sal Viejo, which is coring at 8296 feet.

Salt Water at Mestinas

Gulf States Oil Company's J. C. Engelman 3, Lot 3, Block 70, Mestinas Grant, deep test in Mestinas, Hidalgo County, was not doing so well, testing salt water and gas through perforations at 8045-55 feet, again at 8016-34 feet and again at 7891-98 feet. It has been cemented a third time, and new perforations will be made higher. The total depth is 8110 feet. Several miles to the southeast, Sterling Oil & Refining Company's Engemnan 1, Lot 5, Block 95, cored a sand showing oil and gas at 7495-7555 feet and was coring ahead, probably to drill to its contract depth of 8000 feet and attempt a series of tests through perforations.

Up in Brooks County, Texas Gulf Producing Company's T. C. Proctor 1, Section 20, 2 miles south of Falfurrias and on Gyp Hill, has been abandoned at 6028 feet. Six miles north of the recently discovered Alta Mesa, Standard Oil Company of Texas has set surface casing and is drilling ahead in Mestina 1, Lease 2, which is to be a deep test.

Cameron County's lone operation, Stapper Petroleum Corporation, is drilling at 5775 feet in Port Isabel 1, 12 miles northwest of Port Isabel.

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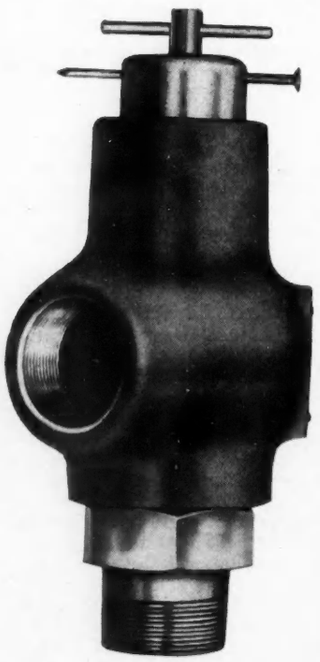
Made in high pressure type for slush pumps, and low pressure type for boiler feed pumps and similar service.



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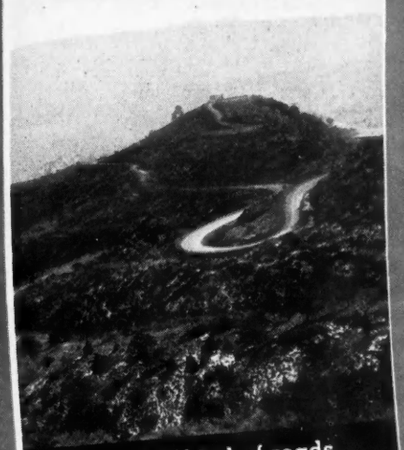

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HOUSTON - TEXAS

SOUTH TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
CALDWELL COUNTY—		
Adams & Lyles, Ellison 4, D. Cooper sur (Branyon)	1560	2185
Easton & Manning, Lawler 2, James Pinchback sur (Buchanan)	200	2230
Lincoln Pet., Branyon 5-B, J. R. Miller sur (Branyon)	175	2335
Taylor Refg. Co., Branyon et al 3-B, D. Cooper sur (Branyon)	66	2180
GUADALUPE COUNTY—		
Perot Oil Co., Priestly 1, 1008 ft el, 160 ft nl of 53-ac tr, G. W. Williams sur 46	*	2093
Saxet Prod. Co., Wilson 1, Green Dewitt sur (South Darst Creek)	135	2410
W. J. Walton et al, Hoffman 1, 660 ft el, 150 ft sl of tr Green Dewitt sur 11	80	2665
MEDINA COUNTY—		
R. C. Hill, Odem 2, Castro sur (Taylor)	*	365
WILLIAMSON COUNTY—		
Taylor Refg. Co., Heap 6-B, H. White sur (Byersville)	502	855
LAREDO DISTRICT		
DUVAL COUNTY—		
Bridwell & Gorman-Yoakam, O. W. Breene 2, sur 118, (Hoffman)	150	2855
J. D. Sutherland 7-B, sur 122, (Hoffman) perf 2710-12	100	2730
Conservative Oil Co., DCRC-Saentz 4, sur 51 (Colmena)	*	1521
Cox & Hamon, Peters-Coates 7, sur 322 (Lopez)	375	2174
Dulce Oil Co., R. Serna Jr. et al 5, BS&F sur (Seven Sisters)	300	2496
Duval Oil Corp., Bishop Cattle Co. 32, sec 57 (Loma Novia)	300	2572
Hiawatha O&G Co., Alfred O. Oskness (Miller) 1, sec 24, Ball Ranch sub (Sweeden)	850	5887
Hooper & Rutherford, Inc., DCRC 1, sec 51 (Colmena)	250	1499
DCRC 2, sur 51 (Colmena)	*	1511
Humble, DCRC 12-C, sur 901 (Lopez)	225	2088
DCRC 13-C, sur 901 (Lopez)	225	2083
Dowdy-Fee 6, sur 272 (Seven Sisters)	850	2557
W. R. Peters 3, sec 398, (Kohler) pb td 2655	185	2658
Magnolia, Servando Benavides 22, blk 5, O'Hern sub (O'Hern)	*	2900
DCRC 1, sec 152 (Charamousca)	*	2995
Texas Co., A. H. Badgley 13, sur 307 (Seven Sisters)	245	2514
Westheimer & Daube, Z. Campos 20, sur 224 (Seven Sisters)	192	2221
JIM HOGG COUNTY—		
J. V. Adams et al, W. P. Allen 1, BS&F sur (Randado)	*	1419
McMULLEN COUNTY—		
Loma Oil Co., L. Jacob Corp., 3-B, GH&H sur 15 (N. Jacob)	*	1070
WEBB COUNTY—		
James M. Anderson, Pablo Juarez 1, 330 ft swl, 330 ft sel, blk 13, sur 1111	*	2526
French Oil Corp., J. M. Garza Est. 2, 330 ft nl, 1650 ft el s½ sur 1121	*	2107
The Hunter Co., A. S. Billings 2-B, sur 113 (Lopez)	260	2222
C. H. Lewis, A. Lopez 9, sur 110, (Lopez)	250	2289
Sierra O&R Co., A. S. Billings 1-A, sur 113 (Lopez) owdd	*	3437
Smith & Hamill, S. Benavides 22, blk 504 (Cole-O'Hern)	225	2942
S. Benavides 28, blk 498 (Cole-O'Hern)	300	2950
S. Benavides 29, blk 455 (Cole-O'Hern)	275	2941
Sun, S. Benavides (Brennen) 7-A, blk 445 (Cole-O'Hern)	250	2950
Wilcox O&G Co., B. B. Dunbar 1, w cor of sur 1135, swl along nwl of sur 1135 extended 2000 ft nw at r/a 800 ft to lcn, Joaquin Galan gr	*	5355
ZAPATA COUNTY—		
Verne Clopton et al, S. Bustamante 1, sh 35, Fansler Partition (Escobas)	*	1405
Sam Evans, S. Bustamante 7, sh 34, (Escobas)	17	1279
Magnolia, Ramona Cuellar 4, 300 ft sel, 300 ft swl of se½ sur 245 (Cuellar)	*	1655
A. D. Haynes 26, sur 7 (Comitas)	42	1168
Matthews Dr. Co. & Earl Callaway, Justina Garcia 2-B, sh 3 (Escobas)	*	2151
Valley Osage Oil Co., A. D. Haynes 13, sur 14 (Comitas)	45	1164
Zapata Corp., M. Garza Est. 12, blk 22, Douglas sub (Escobas)	*	1744
CORPUS CHRISTI DISTRICT		
BEE COUNTY—		
Dirks Bros., Tom Strauch 1, 500 ft el, 990 ft sl of sec 19, Chittam Ranch sub, Uranga gr	450	4275
BROOKS COUNTY—		
Texas Gulf Prod. Co., T. S. Proctor 1, 330 ft s and el of blk 2, sec 20, Los Olmos Y Loma Blanca sur	*	6028
DE WITT COUNTY—		
G. B. White et al, W. L. C. Poetter 4, 2663.4 ft sel, 200 ft swl 591-ac tr, W. C. Brown sur	*	4457
HIDALGO COUNTY—		
Ralph E. Fair, Inc., A. Flores 3, sh 250, porc 38 (Samfordyce)	390	2986
Harrison & Danvers, M. L. Flores de Pena 1, sh 250 porc 38 (Samfordyce)	850	3025
Val Tex Oil Co., M. F. de Chapa 2, porc 39 (Samfordyce)	350	3002
JIM WELLS COUNTY—		
Arkansas F.O. Co., G. H. Bierstadt 1, 467 ft s and el of blk 32, Joseph Reynolds sur	*	5017
Graham & Gilcrease, F. Bennett 4-A, lots 56 and 57, sec 76 (Premont)	175	2256
L. E. Seeligson 2, lots 97 and 112, sec 77 (Premont)	220	2257
Stanolind, J. W. Bird 1, 425-ac tr, Los Presenos de Abajo gr, 1 mi w field (Bentonville), pb and perf 4048-78	¶10	5836
S. J. Sloane et al, D. D. Nash 1, lots 102 and 107, sec 76 (Premont), pb and perf 2248-51	450	2352
KARNES COUNTY—		
Magnolia, G. Porter 13, B&B sur 22 (N. Pettus)	275	3732
LIVE OAK COUNTY—		
Marzo Oil Co., Mrs. Bessie Chestnut 1, 50-ac lse, L. Ayers sur, 2 mi e Jacob field	*	1275
NUECES COUNTY—		
I. J. Allen & Seaboard Pet. Co., J. O. Chapman et al 2, sec 38, Laureles Farm tr, Ramon de Jnojosa gr, pb and perf 6460-67	750	6716
Crown Central, Rand Morgan 6-A, sur 315 (Saxet)	500	4450
Houston, E. McGregor et al 12, sur 582 (Saxet)	850	5826
Humble & Barnsdall, R. A. Gilden 1, lot 30, blk 47 (Flour Bluff)	650	6669
Josie Miller 3-B, lot 4, blk 48, (Flour Bluff)	600	6657
Solar Oil Co. et al 1-A, lot 13, blk 47 (Flour Bluff)	650	6656
Pan American Prod. Co., Rand Morgan 8-A, sur 403 (Saxet)	750	5827
J. Sagarino 5-A, sur 403 (Saxet)	700	5819
Port O&G Co., Cox & Cryer 1, sur 166 (Saxet)	375	3186
Potter Pipe Line Co., A. Cohern 4, Webb 1000-ac gr (Saxet Heights)	375	4100
Renwar Oil Corp. & C. Andrade, Fred Frank 6, sur 416 (Saxet)	650	5821
Republic Nat. Gas Co., John Dunn 18, Sheppard Farm lots (Saxet)	550	4868
L. B. Hutchins 2, sec 9, Range 5 (Saxet), pb and perf 4050-55	500	4870
Richardson Pet. Co., F. Quiroz 7, blk 40, Sheppard Farm lots (Saxet), pb and perf 5823-27	900	5850
Taylor Pet. Co., C. C. Country Club 7, Vilareal gr (Saxet Heights)	*	7531
Texas Co., Clara D. Sevier 1, Wm. Gamble sur (Clara Driscoll)	*	5437
REFUGIO COUNTY—		
Hewitt & Dougherty, M. F. Lambert 41, sur 7 (Tomoconnor)	2750	5897
Josey & Bruton, M. F. Lambert 4-A, Swisher sur (Tomoconnor)	1500	5900
Quintana Pet. Co., Tom O'Connor 12-C, Swisher sur (Tomoconnor)	1250	5925
United Prod. Corp., M. F. Lambert 39, Swisher sur 7 (Tomoconnor)	1000	5904
SAN PATRICIO COUNTY—		
Humble, J. W. Flynn 3, sec 1, Third Add Taft Farm Lands	700	4975

*Failures; †Junked; ¶Million cu. ft. gas.

Shreveport.—Two wildcat blocks were assembled last week in East Texas border counties. In Panola County Radio Tex Oil Company is re-assembling a block around the John McAdams Survey, near the Rusk County line where McAneny and Flinchbaugh drilled a test several months ago, for a proposed Glen Rose test. In Sabine County, 8 miles northeast of Hemphill, J. H. Chestnut of Houston, has assembled a 6,000-acre block around the William Murphy and adjacent surveys.

332 TEXAS STARTS

Austin.—The Railroad Commission approved last week permits for drilling 332 new wells in Texas, 154 more than were allowed the week before.

North Texas operators listed 75 locations, with 26 in Young County, 19 in Archer County, 16 in Cooke County, and 11 in Jack County. There were 24 locations from West Central Texas.

West Texas reported 61 permits with 26 in Winkler County, and 15 in Ector County. There were 20 from the Panhandle.

Gulf Coast operators listed 58 permits including 10 in Brazoria County. There were 38 from Southwest Texas.

In the East Texas field, there were 35 permits with 20 in Gregg County, seven in Upshur County, six in Rusk County, and two in Cherokee County. East Central Texas reported 21 locations.

TEXAS GULF COAST

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Lefler 1 (perforated 6775-78 ft)	624	6784
Glenn H. McCarthy, Longe 3	318	5389
BARBERS HILL—		
Stanolind, Chambers 25	167	4904
Texas Gulf Fitzgerald 1 (wo)	301	3801
BIG CREEK—		
Texas Gulf, Blakely 15	231	3954
CONROE—		
Normandie Oil Co., Urech 1	586	5038
Strake, Dear 12-B	546	5077
DAMON MOUND—		
H. Wisdom, Jackson A-6	20	1501
ESPERSON—		
General Crude, Moores Bluff 26	*	lcn.
GOOSE CREEK—		
J. D. Coy, Wright 1	44	1469
HASTINGS—		
Humble, Moody 1	648	6080
Stanolind, Edwards 2	528	6080
HULL—		
Republic, Dolbear 144 (wo) (otd 1400 ft, dr to 2208 ft)	320	2208
HUMBLE—		
Wilson Oil Co., Burt 6	26	2535
LOCHRIDGE—		
Gulf, Baker 1	120	6358
MANVEL—		
Texas Co., Houston Oil Field Association 13	*	4050
MARKHAM—		
G. G. Hamil, Hudson 1	164	3669
Hamil & Hamil, Hutchinson 1	154	3670
Thompson Drlg. Co., Sisk 1	¶1	3288
OLD OCEAN—		
Harrison & Abercrombie, Bernard 3, (producing 10,263-293 ft)	300	10,435
PIERCE JUNCTION—		
Hamil & Smith, Sanders 3	392	3804
Rio Bravo, Settegast A-30	412	3767
RACCOON BEND—		
Humble, McCasland 13-X	344	3125
WITHERS—		
Texas Co., Pierce Estate C-23	96	5556
BRAZOS COUNTY—		
Crosby Drlg. Co., Orlando 1, e of Millican, T. H. Mays sur	*	3915
HARDIN COUNTY—		
E. J. Kimball, Keith Lbr. Co. 1, w of Voth, L. A. Rogers sur	*	2160
HARRIS COUNTY—		
B. A. Farrell & J. B. Cox, Bender Estate 1, w of Humble, M. W. Travis sur	*	1182
WALLER COUNTY—		
Sumas Prod. Co., Menka 1, se of Hempstead, C. Donohue sur	*	5095
H. E. Williams, Giddings 1, near Hempstead, J. Mouser sur	*	4408
WASHINGTON COUNTY—		
Smith & Schlenker, Hoddle 1, nw of Brenham, J. Clark sur	*	2500
WHARTON COUNTY—		
Albert Plummer, Logue 1, Spanish Camp prospect, S. F. Austin sur, (perforated 3015-20 ft)	¶1	8199

*Failures; †Junked; ¶Million cu. ft. gas.

Watch Palacios

McCARTHY WILDCAT TESTING FRIO AT 8570-8580 FEET

WEEKLY STAFF REPORT

Houston.—Considerable interest was being shown in Glenn H. McCarthy's Foley 1, potential field opener on Palacios prospect, L. Goodwin Survey, Galveston County, March 26, when a production test was being made of Frio sands after casing had been perforated with 60 holes from 8570 to 8580 feet.

Information has been withheld from companies by the operators until the past week when a log of the well was given out.

According to some, the well will make only gas and distillate, while others state that it will be an oil producer. There is no open acreage in the area, and only about four companies and individuals are interested in the well.

If Glenn H. McCarthy opens an oil field at Palacios it will be his fourth major strike in the Texas Gulf Coast. He was successful in extending Anahuac field 2½ miles some time ago; he extended Amelia field, Jefferson County 2½ miles north, and discovered Cotton Lake field in Chambers County.

Foley 1 was drilled to 8682 feet, and sands showing oil and gas were encountered from 7646 to bottom. According to Mike Halbouty, geologist for the company, seven-inch casing was cemented at 8640 feet.

Profitable Production at South Cotton Lake

South Cotton Lake field, Chambers County, was extended 1000 feet north by what is believed to be the first profitable oil producer in the area. Salt Dome Oil Corporation's Lawrence 1-C, S. Barrow Survey, on the first four-hour gauge from 6 to 10 a. m. March 26, made 98 barrels of 33 gravity oil through a quarter-inch choke for two hours and a 3/16-inch choke for the other two hours. Tubing pressure was 1000 pounds; casing pressure, 500 pounds. The well is flowing from Frio sands at 6498 to 6503 feet. The well was washed in the night of March 25 and turned into the tanks March 26 and on the first hour gauge through a quarter-inch choke made 44 barrels of oil with a little sand. The next 40 minutes the well made 37½ barrels through a quarter-inch choke with a tubing pressure of 1000 pounds and a casing pressure of 500 pounds.

Lawrence C-1 was drilled to 6503 feet. Top of the gas sand was logged at 6488 feet and oil sand was encountered at 6492 feet. On a drill stem test from 6498 to 6503 feet the well flowed from 25 to 35 barrels in one hour through a quarter-inch choke, making from one to two percent washwater. Pressures registered 900 pounds. Seven-inch casing was cemented at 6498 feet. After setting screen and liner the well came in flowing pipe line oil.

Lawrence C-1 topped Discorbis at 5611 feet, Heterostegina at 5903 feet, Marginulina at 6180 feet, and Frio at 6488 feet. Elevation is 42 feet.

Salt Dome Oil Corporation's Lawrence B-1 was completed at approximately the same depth as Lawrence C-1 and is making around 40 barrels of high gravity distillate. Other wells drilled in the area have shown gas and distillate, but it is generally believed that Lawrence C-1 is first commercial producer completed in the area. Gas from Lawrence B-1 was used to furnish fuel for Lawrence C-1.

In the Seabreeze area of Chambers County, Sun Oil Company's White 1-A, T. & N. O. Survey, Section 128, was making approximately one barrel of fresh water daily through ⅛-inch choke with a tubing pressure of 3050 pounds and a casing pressure of 2800 pounds. Last week the well made a small amount of distillate.

Aldine Wildcat to Test

Texas Gulf Producing Company's Gillespie 1, Aldine prospect, Harris County, plugged back at the end of the week to around 7147 feet and set 7-inch casing to perforate Upper Saline Bayou sands from 7074 to 7104 feet which showed signs of gas and distillate production and possible oil production on a drill stem test. A production will be made the coming week. If the well produces oil or distillate in commercial quantities it will open a new producing area for the Texas Gulf Coast.

Gillespie 1 was drilled to 8084 feet, being the third well in the Salt dome district to encounter Cook Mountain formation. On a drill stem test from 7074 to 7104 feet the wildcat showed 7 thribbles and two doubles of mud cut with distillate and a 290-pound pressure in 10 minutes through 2 ¼-inch chokes.

In the Bammel area and near the Aldine prospect, Hamil & Smith, who took over George Lawrence et al's Zappe 1, J. Farrell Survey, Harris County, perforated casing on the wildcat from 6412 to 6428 feet. Five-and-one-half-inch casing was cemented at 6623 feet. A production test will be made of this wildcat over the weekend. Zappe 1 was drilled to 6525 feet, where the drill stem stuck. The hole was plugged to 6100 feet and Hamil & Smith took over the well.

On the flank of Hockley dome, Harris County, Stanolind Oil & Gas Company was preparing to make a drill stem test on Warren Minerals 1, H. & T. B. Survey No. 1, at 6685 feet. Several sands with odors have been cored.

West of Humble, B. A. Farrell & J. B. Cox et al abandoned Bender Estate 1, M. W. Travis Survey, after testing sands at 1182 feet. Screen and liner were set, but the well failed to show anything of commercial value after swabbing.

New Sand at Amelia

A new oil sand was found north of Amelia last week when Glenn H. McCarthy completed Longe 2, H. Williams Survey, flowing 318 barrels daily through ¼-inch choke with a tubing pressure of 375 pounds and a casing pressure of 600 pounds from sands at 5364 to 5389 feet. On a drill stem test these sands yielded 15 stands of pipe line oil. Longe 3 is the largest well completed in this part of the field.

On the west side of Amelia, Humble Oil & Refining Company completed Lefler 1, C. Williams Survey, making 26 barrels of 29 gravity oil per hour through ¼-inch choke with tubing and casing pressures of 1400 pounds. Five-and-one-half-inch casing was perforated with 9 shots from 6775 to 6778 feet. Oil sand was logged at 6760 feet and gas sand topped at 6716 feet. Humble

Pipe Line Deal

[*Continued from page 13*]

production and considerable acreage awaiting development.

Since the new corporation proposes to increase its crude runs to near capacity, all production of any consequence held by the owners will be connected through the extension of new lines and construction of gathering systems. This program will probably involve the building of systems in Winkler, Ector, (south) Ward and Pecos counties.

Campaign for outside crude purchases will likely be launched in West Texas and New Mexico by the four concerns holding stock in the new corporation. The Texas Company will sustain a loss in New Mexico purchases because of its associates placing a call on their own production. Sinclair Prairie Crude Oil Purchasing Company will, according to reports, conduct a campaign for outside oil to bolster the supply needed for refineries at Houston and on the Atlantic Seaboard. Sinclair Refining Company, pipe line division, does not have sufficient capacity into Houston to supply the requirements, and in recent months has diverted East Texas oil through the line of another company on a common carrier basis.

The Texas Pipe Line Company owns 37½ percent stock interest with Tide Water-Associated Oil Company and Empire Oil & Refining Company in a 12-inch carrier that extends from the East Texas field to Port Arthur. This unit is known as The Texas-Empire Pipe Line Company of Texas, and does not operate a gathering system. The Texas Pipe Line Company and Empire Oil & Refining Company own an equal interest in The Texas-Empire Pipe Line Company, which operates a multiple system from the Seminole field, Oklahoma, to East Chicago, Indiana.

Oil & Refining Company's Legrange 1, C. Williams Survey, was ready for completion at the end of the week at 6780 feet. Top of the first sand was found at 6663 feet and 5-inch casing cemented at 6780 feet. It will be perforated next week for a production test.

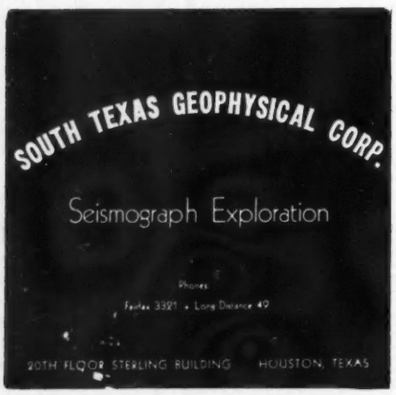
Approximately 1300 feet north of production at Nome field, Jefferson County, Shell Petroleum Corporation was waiting on cement to set at 6145 feet in Carpenter 5, M. Peveto Survey. The well is below the regular producing sand and an electrical logging device run to 6050 feet showed very little sand.

Testing Nome Flank Test

On the northwest side of Nome, Sun Oil Company was testing Long 1, J. Blair Survey, at 6050 feet. At the end of the week the well was flowing a little oil and had a tubing pressure of 950 pounds and a casing pressure of 1280 pounds. Long 1 was one of the first tests drilled at Nome and was abandoned after drilling below 9500 feet. After the field was discovered by Shell Petroleum Corporation, Long 1 was worked over. Sun Oil Company's Mouboules 1 was preparing to test at 8176 feet at the end of the week.

Stanolind Oil & Gas Company's Fitzhugh 1, Big Hill area, Wm. McFaddin Survey, was dead at the end of the week. On a potential test the well made 56 barrels of 36.8 gravity oil, 4 percent basic sediment and water, tubing pressure was 125 pounds, casing pressure 700 pounds. The operators are cutting and pulling screen for another production test.

In the Cheek area, Jefferson County, Humble Oil & Refining Company made a production test on Jefferson Land Company 1 at 7769 feet which showed salt water. The well was drilled to 8458 feet and plugged back to 7746 feet.



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Casing was perforated with 10 shots from 7764 to 7769 feet, but after swabbing the test showed salt water. A cement retainer has been set and the operators will make another test.

Segno Extended 3500 Feet East

Segno field, Polk County, will probably be extended 3500 feet east by Humble Oil & Refining Company's Kirby Lumber Company 1, P. Garcia Survey. The well was preparing to run casing for a production test of Cockfield sands at 5202 feet. Oil sand was found around 5190 feet. Elevation of Kirby Lumber Company 1 is 162 feet; it encountered the Hockleyensis at 4370 feet and the Cockfield at 5119 feet.

Rajo Oil Corporation announced location for Wing 1 at Segno. It is in the center of the east and west line and 254 feet south of the north line of an 11.43-acre tract in I. & G. N. Survey No. 15.

Jack Frazier has announced another location for Hardin field; Hanchy 1 is in the center of the east half of the north 35 acres of the south 70 acres of the Hanchy 85-acre tract.

H. E. Williams' Giddings 1, near Hempstead, Waller County, J. Mouser Survey, was abandoned at 4408 feet after hitting salt water in the Cockfield. Salt water sand was logged from 3977 to 3991 feet. Top of the Cockfield was encountered around 3870 feet. In the same area, Sumas Production Company's Menke 1, southeast of Hempstead, C. Donohue Survey, was also abandoned at 5095 feet after encountering salt water sand. Top of the sand was found at 4748 feet.

Lochridge Extension Plugging Back

Approximately 1700 feet east of production at Lochridge field, Brazoria County, Shell Petroleum Corporation's No. 2 Ramsey, J. W. Hall Survey, was plugging back from 6390 feet and will probably make a production test around 6365 feet. A drill stem test at this depth showed 2000 feet of pipe line oil in 5 minutes with a 75-pound pressure through ¼-inch chokes.

Gulf Oil Corporation completed another oil producer in the Lochridge area last week when C. Baker 1, J. W. Hall Survey, came in from 6358 feet, flowing 5 barrels per hour through ¼-inch choke with a tubing pressure of 2150 pounds and a casing pressure of 2300 pounds. Top of the sand was logged at 6344 feet, and 7-inch casing set at 6348 feet.

Peigneur Wildcat

VALUE OF TEST IN LAKE YET TO BE DETERMINED

Lake Charles.—Jefferson Lake Oil Company's Lake Peigneur 414, Jefferson Island dome, 12s-5e, Iberia Parish, was shut in March 18 after flowing a small amount of oil from Miocene sands at 6945 feet. During the past week this potential discovery well made a drill-stem test with the testing tool connected onto the tubing and showed a small amount of oil. Some have estimated the well to have made 500 barrels daily but this report could not be confirmed. It is known, however, that a flow of approximately 190 barrels, 50 percent salt water, 36.2 gravity oil went into the storage tanks, and that was all the oil that could be found that came from the well. The flare burned for some time and could be seen from the shore of Lake Peigneur.

This wildcat is located in the middle of a large lake. Little information has been given out by the operators and all reports out on the test are conflicting except the one about oil and salt water in storage tanks. It is believed that the hole will be cemented again for another production test.

At Valentine, Lafourche Parish, Pan American Production Company was drilling below the regular producing horizon in Harange 3, Section 8-17s-20e, and is reported to be running about 150 feet lower than Harange 2. One foot of oil sand was encountered in the present test from 7089 to 7091 feet. It will be carried down in search of a new producing horizon.

On the Mallard Bay prospect, Cameron Parish, Pure Oil Company was cutting and pulling casing at the close of the week to abandon State Mallard Bay 1, at 10,146 feet. The hole was plugged back and several tests made. The last test showed salt water at 5768 feet. The 9⅝-inch casing was perforated with 10 shots from 5763 to 5768 feet and a drill-stem test showed one thribble of drilling mud and 42 thribbles of salt water. Casing was shot at 4590 feet. This is the fourteenth 10,000-foot hole drilled in the Louisiana Gulf Coast.

Amerada Petroleum Corporation and Stanolind Oil & Gas Company are reported to be getting ready to abandon Calcasieu National Bank 1-B, China prospect, Section 28-7s-3w, Jefferson Davis Parish, at 9139 feet where the well blew out several weeks ago. It is understood that the 10-inch casing parted and that the top of the fish was found at 1928 feet. If the hole is abandoned, no doubt another wildcat will be drilled in this area.

Three at Tepetate

Three producers were completed at Tepetate, Acadia Parish, last week by Continental Oil Company. On the east side of the field P. W. Miller 3, Section 28-7s-2w, came in making 212 barrels of 34.2 gravity oil in 20 hours through a 3/16-inch choke with tubing pressure of 1000 pounds and casing pressure of 750 pounds, from sands at 8313 to 8318 feet. Top of the gas sand was logged at 8303 feet. On the west

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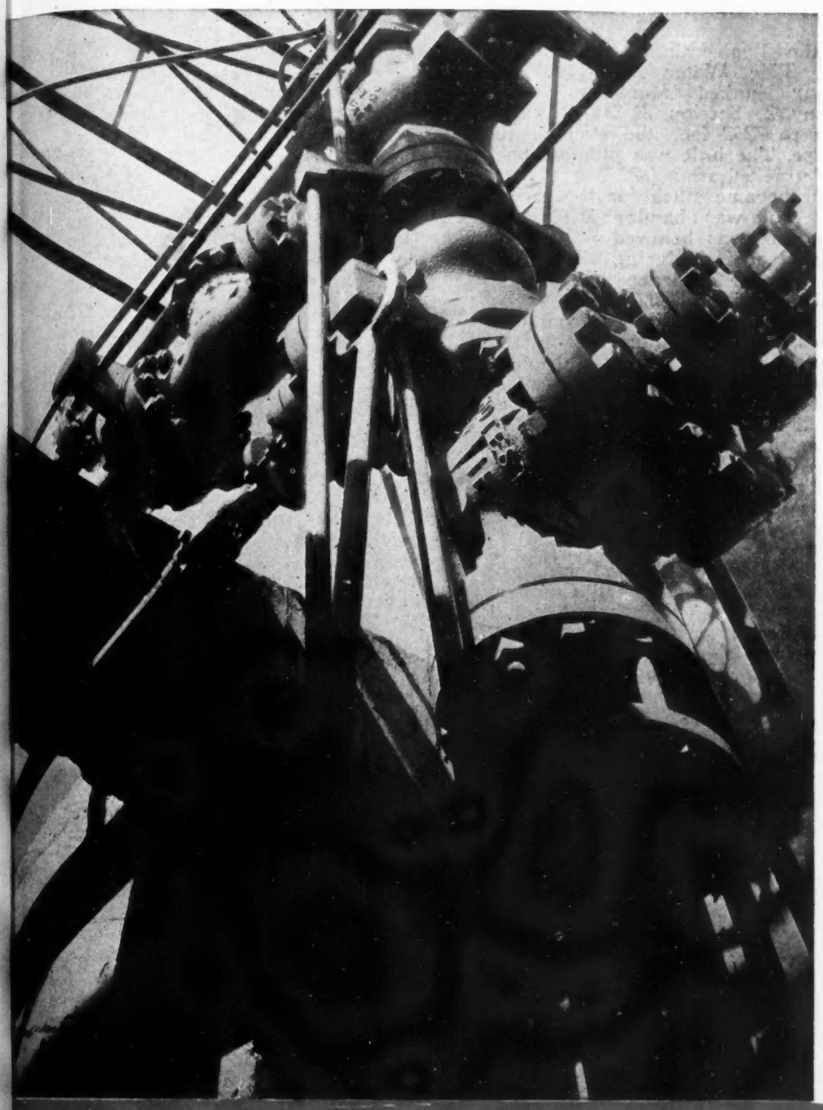

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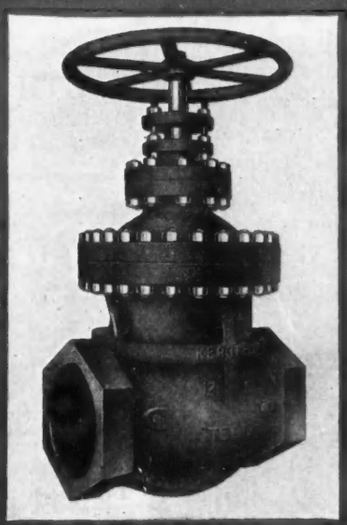

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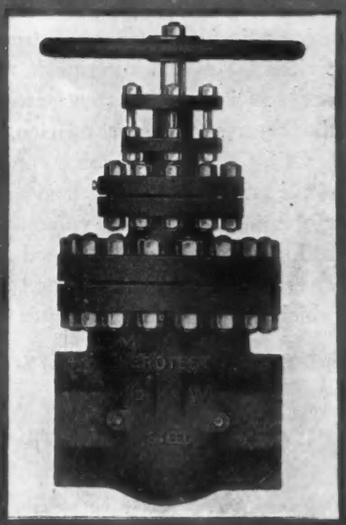

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side of the field, M. Ortego 1, Section 30-7s-2w, came in making 106 barrels of 36.6 gravity oil from sands at 8303 to 8317 feet. Gas sand was logged at 8298 feet. Homeseekers 9-A, Section 29-7s-2w, made 330 barrels in 17 hours through a ⅜-inch choke and with tubing pressure of 1200 pounds and casing pressure of 600 pounds, from 8310 to 8320 feet. On the northeast side of the field, Continental Oil Company made location for Welsh 7, C W½ NW¼ 28-7s-2w. On the southwest side the operators made location for Homeseekers D-2, 952 feet south and 615 feet west of NEc SW 29-7s-2w.

Humble Oil & Refining Company's Nordyke 1, at Ebenezer, Section 23-10s-1e, Acadia Parish, was drilling below 9495 feet in shale after encountering more sandy shale formations with odors of oil and gas. From 9213 to 9230 feet, 9312 to 9319 feet, and from 9367 to 9374 feet sand and sandy shale which had odors of gas was logged. Nordyke 1 is east of the company's American Rice Milling Company 1, which was abandoned at 9308 feet. It probably will be drilled to 10,000 feet.

On the southwest side of Jennings, Acadia Parish, Superior Oil Producing Company was milling on Wm. Leckelt 2, Section 42-9s-2w, at 7040 feet. Seven milling tools have been run in the hole. The previous week 7-inch casing was set at 7040 feet.

Deeper Show at Lake Hermitage

Evidence of deeper production at Lake Hermitage, Plaquemines Parish, was shown the past week when Gulf Oil Corporation set 7-inch casing in Lafourche Basin Levee District 6, Section 12-18s-25e. Sand showing oil was logged from 6370 to 6390 feet and an electrical logging device showed four ohms. A drill-stem test was attempted but failed. If the well produces it will open a new deep sand for the field.

On the Venice dome, Plaquemines Parish, Tide Water Associated Oil Company junked Manhatten Fruit Company 2, Section 26-21s-30e, after drilling to 7252 feet and sticking the drill pipe. The hole was plugged back and sidetracked around 2830 feet. After the pipe became stuck for the second time the hole was abandoned. This test at one time was believed to stand a good chance of producing oil. A sand which showed evidence of oil was cored from 6429 to 6436 feet. Another slight showing was logged from 6776 to 6786 feet. At a shallower depth two sands were cored from 5934 to 5952 feet and from 5982 to 8986 feet which showed from 5 to 14 ohms on an electrical logging device.

In East Feliciana Parish, Barnett Petroleum Corporation abandoned Tullos 1, Section 34-2s-1w, at 6508 feet in shale. It was drilled 242 feet into the Cockfield formation, topped at 6262 feet.

North of Hope Villa in East Baton Rouge Parish, Cavalier Oil Company announced location for W. A. Elliott 1. It is 200 feet from the north line and 200 feet from the west line of Section 3-8s-2e.

In the Big Lake area of Cameron Parish, Union Sulphur Company's Hebert 1, Section 18-12s-8e, reported 20 feet of oil sand at 6815 feet at the end of the week and is making a drill-stem test. If the well becomes a commercial producer it will be the first in the Big Lake area. The district has yielded some gas and distillate.

Herton Oil Company was preparing to make a production test on Carter 5, Section 38-13s-9e, at Jeanerette, St. Mary Parish, at the end of the week. The hole was drilled and cored to 7054 feet in sand showing oil after logging the top of the sand at 7048 feet. Seven-inch casing has been cemented at 7037 feet and plugs should be drilled the coming week. Sands with odors of oil have been encountered at 7014 feet to the bottom of the hole.

Nearing 11,000 Feet

At Wax Lake, St. Mary Parish, The Texas Company was drilling below 10,975 feet after setting 7⅝-inch casing at that depth in Horseshoe Bayou 1, Section 40-17s-9e. If the well penetrates formations below 11,000 feet it will be the third well in the Louisiana Gulf Coast to go that far and also the eighth in the world. It is not known just how far the operators intend to drill, but it is rumored that it will be below 12,000 feet.

Another 11,000-foot test looms in Humble Oil & Refining Company's Ellender 1, Houma gas field, Section 23-19s-19e, Terrebonne Parish, which was drilling in shale at 10,898 feet at the end of the week. A string of 9⅝-inch casing has been set at 8735 feet—the longest string of this size ever set. If production is not encountered at a greater depth the hole will be plugged back and sands which have shown oil will be tested from 8100 to 8450 feet.

35 Drilling Permits

Thirty-five drilling permits were authorized last week by the minerals division, Louisiana Conservation Commission, of which 20 were for North Louisiana, divided among the following parishes: Caddo 12, including 7 for Rodessa; Grant 1; LaSalle 1; Sabine 2; Webster 4, including 3 for Cotton Valley deep tests. The 15 in South Louisiana were divided among the following parishes: Acadia 6, Ascension 1, Calcasieu 2, Cameron 1, Jefferson Davis 1, Plaquemines 1, St. Mary 2, Terrebonne 1.

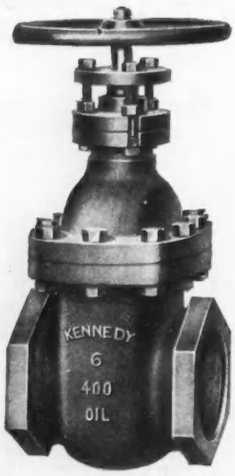
SOUTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
IOWA—		
Shell, Heyd 22	575	4432
TEPETATE—		
Continental, Homeseekers 9-A	456	8320
P. W. Miller 3	264	8318
M. F. Ortego 1	106	8323
WEST HACKBERRY—		
Stanolind, Carter-Sweeny 6 (perforated 4151-80 ft)	300	4223
CAMERON PARISH—		
Pure, State Mallard Bay 1, Mallard Bay prospect, 22-13s-3w	*	10,146
EAST FELICIANA PARISH—		
Barnett Pet. Corp., Tullos 1, near Jackson, 34-2s-1w	*	6508
PLAQUEMINES PARISH—		
Tide Water Associated, Manhattan Fruit Co. 2, Venice dome, 26-21s-30e	*	7252

*Failures; †Junked; ¶Million cu. ft. gas.

Specially Designed for Oil Service



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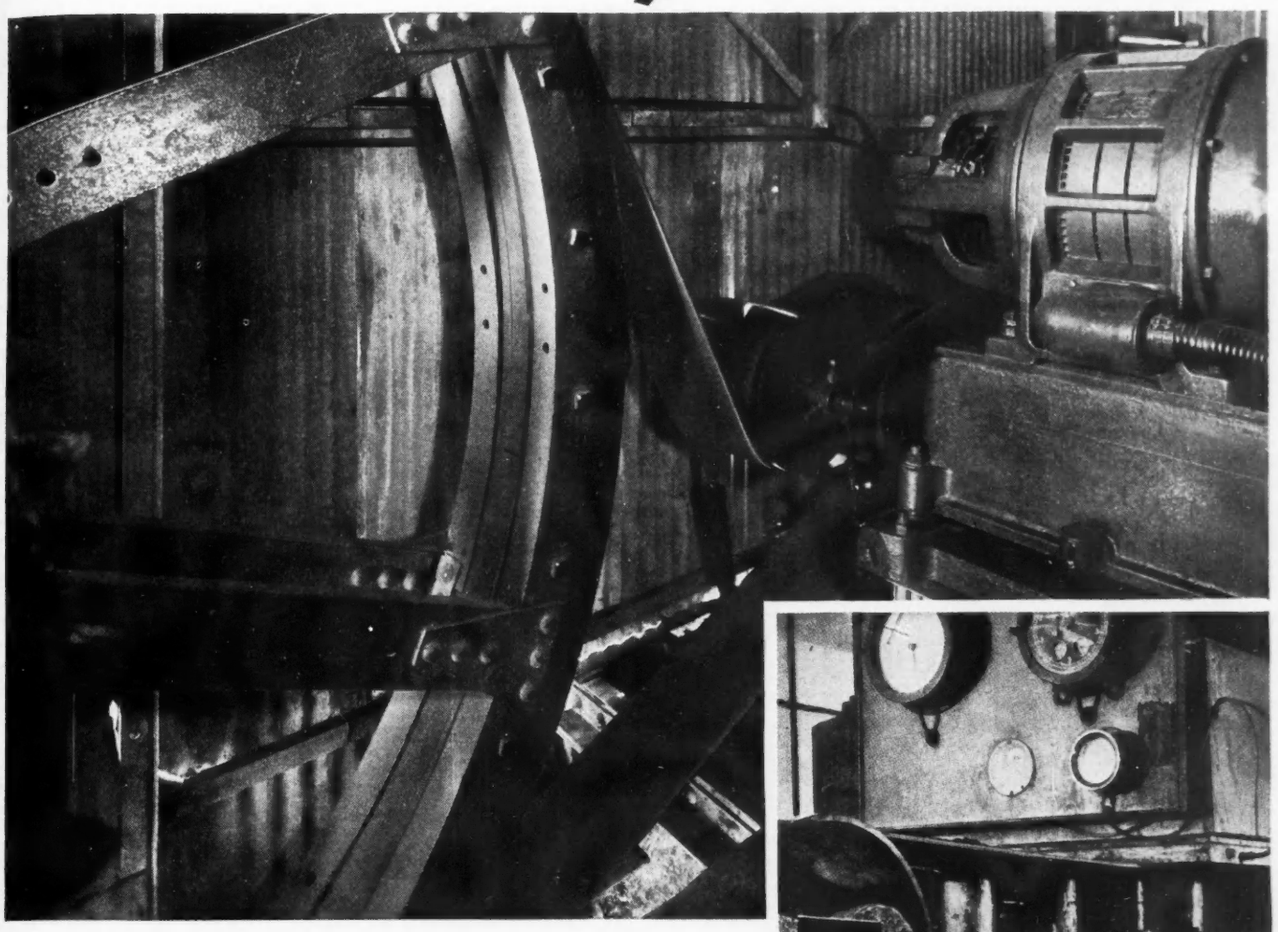

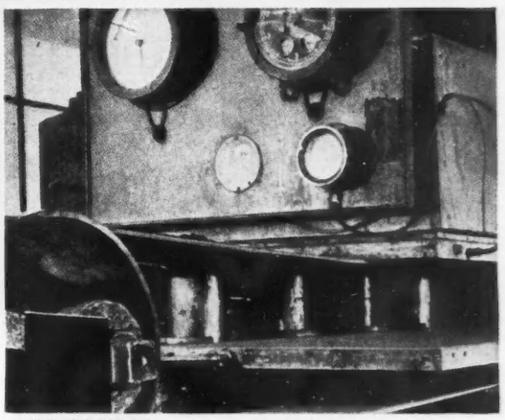

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Ship First Oil

SHELL TAKING PRODUCTION FROM MARION COUNTY TEST

NORTH LOUISIANA

WEEKLY STAFF REPORT

Shreveport. — Holcomb, Thomasson and associates' shipped the first oil from Lizzie Henderson 1, R. Bennington Survey, Marion County, Texas, fourteen miles southwest of Rodessa production, to Shell Petroleum Corporation at its Norco, Louisiana refinery. Tender for 1800 barrels of oil which has accummulated during the various swabbings and flowing of the well was secured from the Texas Railroad Commission. The oil was shipped March 25, in tank cars.

Holcomb, Thomasson and associates resumed swabbing this well last week after perforating casing from 5946 to 5948 feet and from 5960 to 5963 feet, loading the well with 140 barrels of oil and installing side chokes.

Arkansas-Louisiana Gas Company successfully completed fishing job in Laura McIntosh 1, William Edmonson Survey, and resumed coring Gloyd formation at 5915 feet; elevation is 272 feet. This well is reported to have cut the fault between the red beds and top of the first anhydrite stringer and the theory is again advanced that a series of echeloned faults exist north of the main fault from the vicinity of the Charles Ames Survey to the T. M. Davis Survey, the formations between these two points dropping approximately 100 feet.

Two Good Wells

Recent completion of 2 good wells on the north edge of production by Magnolia Petroleum Company in L. Haywood 7 and 8, Priscilla Evans Survey, Cass County, is expected to cause added development by this company of this 440-acre lease toward the north as the Mitchell sand, lower phase of the Gloyd has been so productive in the later wells on the lease. Saturation in the Mitchell apparently dips 100 feet in the 2-mile interval between the producers on the north edge of this lease and in the Bay Oil Corporation's G. G. Parker 1, G. Crowder Survey, northwest outpost producer that was good for about 100 barrels daily from the same horizon.

The fourth oil well was completed during the week in the north offshoot on the Louisiana side when Standard Oil Company of Louisiana completed Armistead 1, Section 9-23n-16w, gauged 383 barrels in 24 hours. Armistead 2 is testing. United Gas Public Service Company made location for Starckey 1, SE SW 9-23n-16w.

R. W. Norton's Payne 1, SE SE 27-23n-16w, south of the fault, was coring at 8685 feet last week. United Gas Public Service Company made location for Land Unit 1, Section 32-23n-16w. Marr & Perkins' Hunter 5, Section 13-23n-16w, being deepened to Travis Peak in the middle of the oil field on the Louisiana side is drilling below 6515 feet.

One and one-half miles southwest of production Ohio Oil Company made four locations on the D. W. Davis lease, William R. Meyers Survey, Nos. 1, 2, and 3 being in Marion County and No. 4 in Cass County as the lease is on the line between the two counties.

South of the fault on the Cass County side of the field, United Production Corporation's J. W. Land 1, Robert Potter Survey, 1½ miles south of oil production, was drilling last week at 6428 feet.

Bottom Hole Pressure Down

Bottom hole pressures on the Louisiana side of Rodessa, as revealed by key wells, declined only 10 pounds for the 28 days of February, 1937, according to a compilation just completed by engineers of the Rodessa operators committee. This represents a daily loss of .36 pounds as compared to .39 pounds per day loss for January.

Daily gas withdrawal from wells on the Louisiana side, including gas wells and those producing oil with gas, for February, was 199,376,000 cubic feet. On a basis of an allowable of 50,000 barrels daily for the field on the Louisiana side, the gas-oil ratio of oil wells was placed by the committee at 1662 to 1, the exact figure that obtained for January.

The following tabulation of weighted averages shows the progress of reduction of drop in bottom hole pressures since July, 1936.

Date	Average Pressures	loss in lbs.	days	daily loss in lbs.
July 7	2314			
Aug. 27	2162	152	51	2.98
Sept. 27	2080	82	31	2.64
Oct. 27	2009	71	30	2.37
Nov. 27	1950	59	31	1.90
Jan. 1	1886	66	35	1.83
Feb. 1	1874	12	31	0.39
March 1	1864	10	28	0.36

Test Checking High

H. A. Stebbinger and associates have cemented 7-inch casing and are preparing to drill plug to test Pickering Lumber Company 2, A. Hanson Survey, Shelby County, Texas, after reportedly logging 19 feet of mealy lime with a show of gas and distillate. Elevation is 205 feet. Massive anhydrite was logged from 4628 to 4825 feet. Casing was cemented after an electrical tester was run to 5036 feet and 5 more feet of formation was cored. The well (on anhydrite) is checking 9 feet lower than the same operators' Pickering 1, C. E. Henry Survey, ¾ mile northwest, but as the dip is southward, the present test is in reality checking higher structurally than Pickering 1.

Moext Oil Company's J. M. Furrh 1, Thomas Alstone Survey, Panola County, Texas, was coring for basal Glen Rose last week at 5680 feet. Magnolia Petroleum Company has spudded E. A. Hull 2, Thomas Applewhite Survey, 3400 feet southeast of E. A. Hull 1, same survey, completed in the Glen Rose last December as a 2,300,000-foot wet gasser.

Kennedy & Batchelor's Lane & Greer 1, wildcat in the J. M. Baker Survey, Harrison County, near the Louisiana line, appears to be a small oil producer in the Tokio. After being acidized at 2365 feet, it made 72 barrels of oil in 12 hours and showed 2,000,000 feet of gas daily. The Tokio formation around the flanks of Waskom in Harrison County has been showing for pumping wells in several recent tests.

Wildcat Waits for Casing

Dunn & Fisher's Susie A. Chatten 1, A. de los Santos Coy Survey, Marion County, Texas, 7½-mile southwest outpost of Rodessa, was awaiting arrival of casing at 5955 feet, after reportedly logging gas-distillate saturation in basal Hill and upper Gloyd formations. Elevation is 247 feet.

Dunn & Fisher's test logged top of the Hill at 5800 feet and top of the Gloyd at 5914 feet, with 19 feet of saturation reportedly logged at base of the Hill and top of the Gloyd. Bottom of the hole is still in the Gloyd. This test checked 17 feet higher on top of the massive anhydrite and 7 feet higher on top of first anhydrite stringer than did Arkansas-Louisiana's W. S. Ford 1, 5-mile southwest outpost of Rodessa.

About midway between the end of Rodessa field proper and Arkansas-Louisiana's W. S. Ford 1, the same company's Laura McIntosh 1, William Edmonson Survey, was fishing at 5901 feet after reportedly logging top of the Hill at 5836 feet. Elevation is 272 feet. The Hill is said to have been tight and showed nothing in the way of saturation.

Arkansas-Louisiana Gas Company's W. S. Ford 1 is preparing to re-perforate casing to test Gloyd formation around 6100 feet. Seven-inch casing was cemented on bottom at 6351 feet. Holcomb, Thomasson and associates' Lizzie Henderson 1, R. Bennington

NORTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH (Rodessa)—		
Standard Oil Co. of La., Armistead 1, 9-23n-16w	338	6025
R. W. Norton, Harden 1, 20-23n-16w	480	6020
CADDO PARISH (Pine Island)—		
Stanolind O&G Co., Dillon Hrs. 118, 14-21n-15w	100	1677
BOSSIER PARISH (Sligo)—		
Ark. La. Gas Co., Hardeman 1, 6-17n-11w	¶26	4325
LA SALLE PARISH (Urania)—		
Lee Oil Corp., L. Tullos 1, 26-10n-1e	2	1529
SABINE PARISH—		
M. A. Halsey, Belton 1, 31-9n-13w	30	1709
Producers O&G Co., Edwards 4, 29-9-13	80	1640
WEBSTER PARISH (Cotton Valley)—		
United Gas Pub. Serv. Co., C. V. Davis 2, 23-21n-10w	550	8551

*Failures; †Junked; ¶Million cu. ft. gas.

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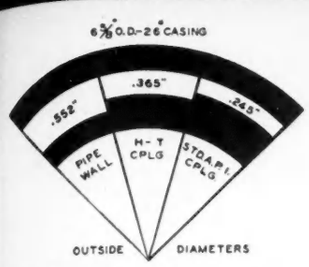
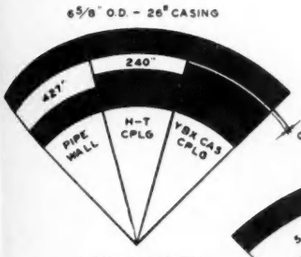


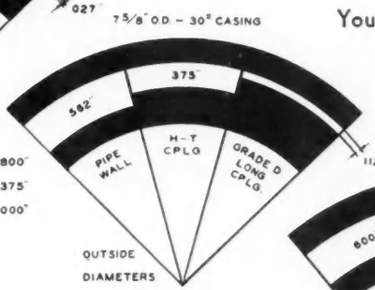
OUTSIDE DIAMETERS

STANDARD A.P.I. COUPLING	5.384"
YOUNGSTOWN H-T COUPLING	5.125"
PIPE OR FLUSH JOINT	4.750"



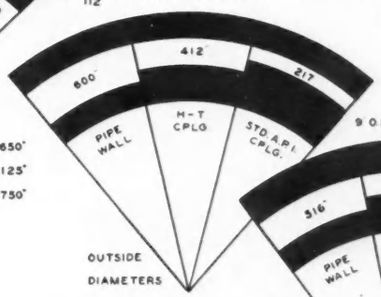
OUTSIDE DIAMETERS

YBX CASING COUPLING	5.800"
YOUNGSTOWN H-T COUPLING	5.375"
PIPE OR FLUSH JOINT	5.000"



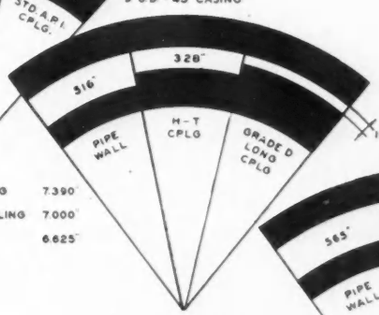
OUTSIDE DIAMETERS

GRADE D LONG COUPLING	6.650"
YOUNGSTOWN H-T COUPLING	6.125"
PIPE OR FLUSH JOINT	5.750"



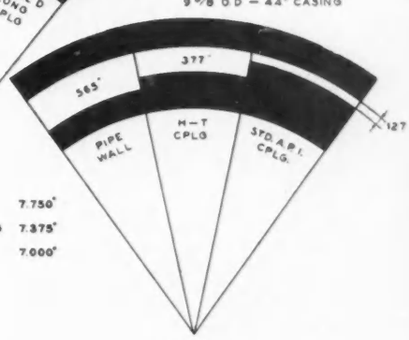
OUTSIDE DIAMETERS

STANDARD A.P.I. COUPLING	7.390"
YOUNGSTOWN H-T COUPLING	7.000"
PIPE OR FLUSH JOINT	6.625"



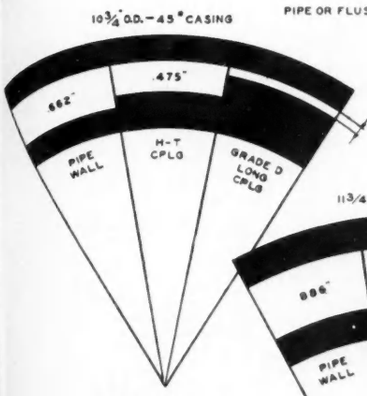
OUTSIDE DIAMETERS

GRADE D LONG COUPLING	7.750"
YOUNGSTOWN H-T COUPLING	7.375"
PIPE OR FLUSH JOINT	7.000"



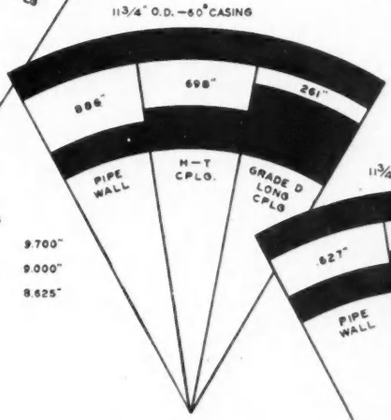
OUTSIDE DIAMETERS

STANDARD A.P.I. COUPLING	8.500"
YOUNGSTOWN H-T COUPLING	8.000"
PIPE OR FLUSH JOINT	7.625"



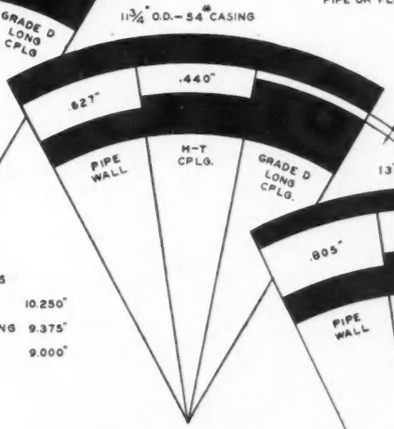
OUTSIDE DIAMETERS

GRADE D LONG COUPLING	9.700"
YOUNGSTOWN H-T COUPLING	9.000"
PIPE OR FLUSH JOINT	8.625"



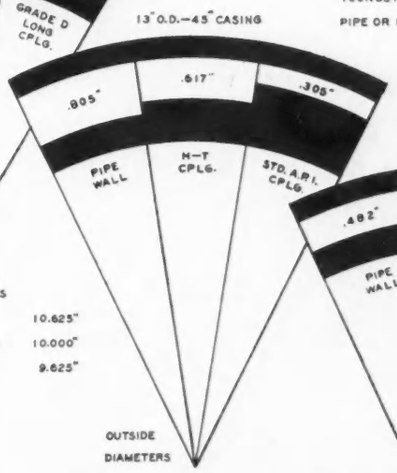
OUTSIDE DIAMETERS

GRADE D LONG COUPLING	10.250"
YOUNGSTOWN H-T COUPLING	9.375"
PIPE OR FLUSH JOINT	9.000"



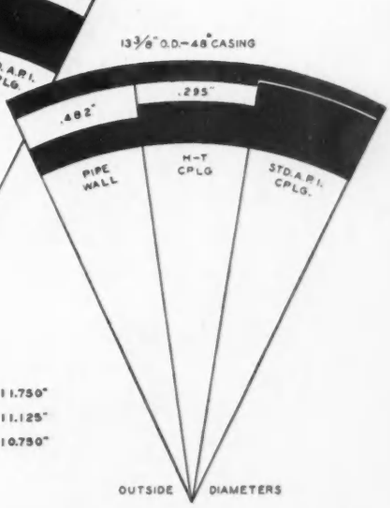
OUTSIDE DIAMETERS

GRADE D LONG COUPLING	10.625"
YOUNGSTOWN H-T COUPLING	10.000"
PIPE OR FLUSH JOINT	9.625"



OUTSIDE DIAMETERS

STANDARD A.P.I. COUPLING	11.750"
YOUNGSTOWN H-T COUPLING	11.125"
PIPE OR FLUSH JOINT	10.750"



OUTSIDE DIAMETERS

STANDARD A.P.I. COUPLING	12.866"
YOUNGSTOWN H-T COUPLING	12.125"
PIPE OR FLUSH JOINT	11.750"

Clearance diagrams on this page approximately 2-5 actual size

OIL COUNTRY TUBULAR GOODS

TRADE MARK

YOUNGSTOWN

Survey, is installing side chokes in an effort to make it flow. Present depth is 5996 feet, with the old total depth of 6405 feet.

Second Well at Lisbon

The Lisbon district, Claiborne Parish, opened last December with completion of E. T. Oakes, H. D. Easton and associates' Patton Estate 2, NE NE 1-20n-5w, at 5379 feet in basal Glen Rose lime, added its second producer March 25, when Ray P. Oden and S. M. Evans completed Patton 1, SE SE 36-21n-5w, north offset to the discovery well, flowing 34 barrels of oil per hour through 7/16-inch tubing choke; elevation is 355 feet. Casing pressure was 400 pounds.

The second well had 12 feet of saturated Glen Rose basal lime that corresponds in age to the Pettit of Sligo and is slightly lower than the Young horizon, the deepest of the producing horizons at Rodessa.

The first 16 hours after swabbing began the well flowed 275 barrels of oil by heads. Late Thursday it was still making 2 percent mud and a similar amount of wash water with the steady flow through choke.

Before casing was cemented a formation tester was run from 5330 to 5375 feet and in a 12-minute test through ½-inch chokes on top and bottom the well rose 600 feet in oil.

Oakes, Easton and associates' Patton Estate 2 has been a consistent producer since its completion late in December and is now averaging 180 barrels daily.

Awaiting the completion of the second well for the field, Gulf Pipe Line Company has surveyed right-of-way for a pipe line to hook into its Shreveport-El Dorado line. Standard Oil Company has also been considering a line to the field, at present the latter company is buying the production from the first well and has been hauling it by truck to Homer.

Three other tests in the field are at critical depths. Lyons and Neely have cemented 6⅝-inch casing in Patton 1, NE NW SW 36-21n-5w, bottomed at 5292 feet with the last 12 feet showing saturation. Red Iron Drilling Company's H. F. Patton 1, SW NE 36-21n-5w, logged top of the saturation at 5290 feet but went into water sand at 5328 feet and is plugging back before cementing casing. Two miles west of the two producers, Lisbon Oil Company's Burgess 1, SE NE 3-20n-5w, had 1½ feet of saturation only at the 5300 foot horizon and is drilling ahead.

Following is a table showing comparisons of sub-sea depths of the two producers and the three drilling tests on top of first anhydrite and on base of massive anhydrite:

Owner and Well	Top First Anhydrite	Base Massive Anhydrite
Oakes-Easton, Patton 2	—3477	—3879
Lisbon Oil Co., Burgess 1	—3507	—3939
Lyons & Neely, Patton 1	—3454	—3861
Oden & Evans, Patton 1	—3458	—3878
Red Iron Drlg Co., H. F. Patton 1	—3468	—3871

Leasing and royalty trading have increased sharply in the last week in the Lisbon area, the play turning somewhat away from the western trend since Lisbon Oil Company's west outpost logged so small an amount of saturation. J. R. Bevill and associates are moving in materials for Edmonds 1, NE NE 16-20n-5w, between the Lisbon wells and the Sugar Creek gas field. Gulf Oil Corporation continues active in securing leases in township 20 north, range 4 west, and Grogan Oil Company acquired a lease in Section 8-20n-5w.

SHOWS, THEN FISHES

Wildcat in Union County recovers 38 gravity oil

ARKANSAS — WEEKLY STAFF REPORT

El Dorado.—Lion Oil Refining Company's Morgan 1, Lot 1, south half of Section 18-18-17, Union County, was fishing for twisted off drill stem March 24 after showing for production on two tests. Oil recovered from the formation tester was 38 gravity. Depth of the well is 5559 feet; elevation is 219 feet.

Fifteen Permits

Fifteen drilling permits were authorized last week by the Arkansas Board of Conservation, as follows:

Clark County—M. W. Martin, Little Rock, Arkansas, C. L. Cabe 1, located 330 feet south and east NWc 14-10-20.

Franklin County—Ozark Natural Gas Company, Fort Smith, A. T. Ervin 1, located 600 feet west and 660 feet north SEc 11-8n-29w.

Miller County—Tony DeGrazier, Texarkana, Arkansas, E. A. Rector 1, 2-acre tract in SEc 36-acre 17-20-28; Allred & Allred, Dallas, Texas, E. A. Rector 1, east 5 acres of south 10 acres of east 20 acres west half, west half 16-20-28; W. M. Layton and associates, Texarkana, Layton 1 to 10, inclusive, all 50 feet north and at various distances east of SWc 17-20-28.

Union County—Marine Oil Company, El Dorado, Arkansas, Thompson E-6, located 330 feet north and east SWc NE NE 10-18-13; Sklar Oil Corporation, Shreveport, Louisiana, Cordell 1, located 200 feet south and west NEc SE SW 24-19-16.

START THIRD TEST

Skid Mississippi rig after losing returns

Hattiesburg, Miss.—Sun Oil Company and Wanette Oil Company were rigging up last week for a third test on their salt dome prospect in Lamar County, 16 miles west of Hattiesburg, after abandoning Mrs. K. Talley 1, near C SE SE 28-4n-15w, in anhydrite at 2015 feet. Rotary returns were lost at this depth, and the owners elected to skid rig 800 feet east by south to drill Mrs. K. Talley 2. Talley 1 logged top of anhydrite at 1995 feet, or 1610 feet sub sea, while Scanlan-Semmes 1, C SW NE 28-4n-15w, logged this same marker at 1655 feet, or 1338 feet sub sea, and was abandoned in salt series at 2522-4024 feet last January. Discovery of this salt dome, the first for the southern part of the state has caused the area to be rated as one of the best oil prospects in Mississippi.

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Lake Charles—Houma—Converse
New Iberia—Rodessa—Monroe—Cotton Valley—Turnertown—Greggton—Houston

BEACONS

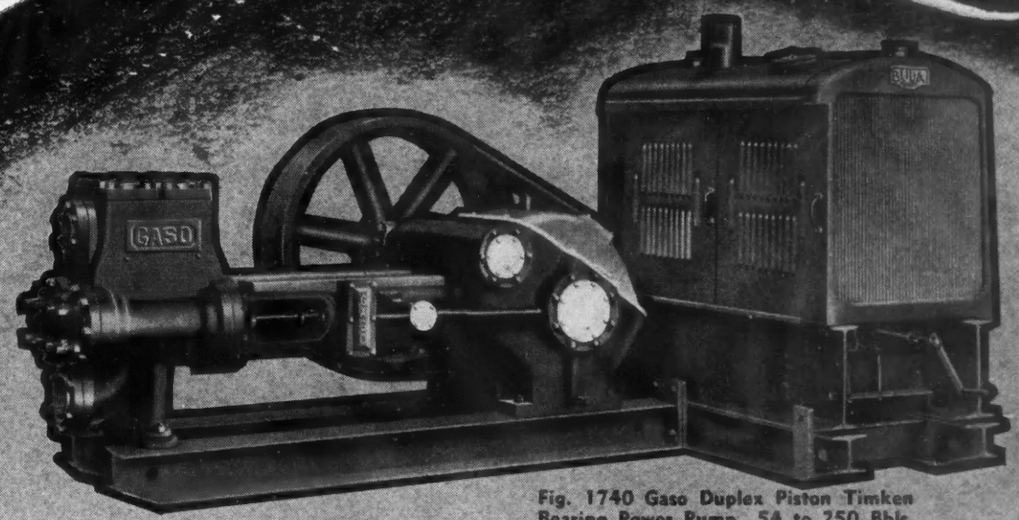

Fig. 1740 Gaso Duplex Piston Timken Bearing Power Pump. 54 to 250 Bbls.

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ROCKY MOUNTAIN FIELDS WEEKLY STAFF REPORT

Casper, Wyo.—Limits to Sundance pool in Lance Creek, Niobrara County, eastern Wyoming, were extended a quarter of a mile to the south and west by completion of A. B. Cobb and the Holly Development Company's Nat Novick 1, NE SE SW 6-35n-65w, for 40 barrels per hour from basal Sundance formation at 3967-90 feet. Flow is pinched back to 15 barrels per hour.

Offsetting the well to the south, the MakInnie Oil & Drilling Company is moving in rotary for Thompson 2, NW NE 7-35n-65w.

Deepening Increases Flow

In deepening a recent completion in the southeastern part of the field Ohio Oil Company materially boosted production. Lamb 9, C SE NE 5-35n-65w, drilled 18 feet of additional saturated Sundance sand to 4090 feet and is testing 30 barrels per hour. A month earlier the well completed at 4050-72 feet and made an initial of 400 barrels daily. The company's Leo-5 OPC-16, NW NW SW 35-36n-65w, topped the first Sundance at 4059 feet and is drilling at 4081 feet in shale break. The well has an elevation of 4470 feet and is closely following structural conditions as mapped on Dakota contours. Ohio Oil Company's Carrie Putnam 8, SW SE SW 33-36n-65w, is spudding at 90 feet.

The J. M. Huber Corporation has pulled tubing to deepen Midwest 1, SE SW 27-36n-65w, outpost gas well in the first Sundance. Well, now bottomed at 3549 feet, will be carried to basal Sundance for a test for oil and possible extension to the east.

Tensleep Fails at Rock River

The first deep test to the Tensleep in Rock River, Carbon County, failed to develop oil in that formation and is plugging back. It is Ohio Oil Company's Harrison-Cooper 7, SE SW 35-20n-78w, an old Dakota producer, which had previously drilled to 5671 feet and plugged back to 5630 feet to test in the Tensleep, which carried water. The company's Harrison-Cooper 1, SE SW 35-20n-78w, another old Dakota well, has deepened to 3225-3325 feet and is swabbing from 15 to 20 barrels daily and apparently will make a small producer for the Sundance sand at Rock River.

In Albany County, Quealy field, the California Company's Wilson 3, SW NW SW 18-17n-76w, is drilling at 1610 feet. Holst-Woolf 1, C NW NW NW 19-17n-76w, is drilling at 301 feet.

Plans for the unitization and gas repressuring of Salt Creek field are being discussed by officials of the operating companies in the field in Chicago this week. A large amount of Salt Creek acreage is held directly by Stanolind Oil & Gas Company, subsidiary of the Standard of Indiana. Standard's refinery at Casper has depended largely on Salt Creek for its crude oil supply.

Consider Salt Creek Repressuring

Under consideration by the group is the laying of gas repressuring line, possibly from Garland field, 200 miles north of Salt Creek. The gas would be used to repressure the second Wall Creek sand. As a preliminary step several of the holding companies, including Mountain & Gulf Oil Corporation, Salt Creek Consolidated Oil Company, Midwest Oil Company, and Wyoming Associated Oil Company, have consolidated their properties.

Garland Well Swabbing

Stock Oil Company's Allen 1-B, SE NW 35-55n-97w, Garland, Big Horn County, is swabbing in after setting the production casing. The well was originally drilled as a relief hole and was used to kill the company's Allen 1, wild gasser. The 7-inch string was cemented at 3903 feet on top of the lime.

MOUNTAIN STATES Completions

COLORADO

Company, Well and Location	Init. Prod. Bbls.	Depth
KIOWA COUNTY—		
Gulf Oil Corp., Risser-Union Pacific 1, csw ne 1-17s-50w	*	6175
LAS ANIMAS COUNTY—		
Garcia Corp., McClung 1, ne nw se 19-33s-61w	*	1816

WYOMING

Company, Well and Location	Init. Prod. Bbls.	Depth
ALBANY COUNTY (Quealy Dome Field)—		
California Co., Holst 6, cw nw se 13-17n-77w	216	3961
GOSHEN COUNTY (Jay Em-High)—		
Ohio Oil Co., Red Cloud Cattle Co. 1, ne nw 28-29n-62w	*	3090
NIOBRARA COUNTY (Lance Creek field)—		
Ohio Oil Co., Carrie Putnam 7, ne sw 33-36n-65w	792	4020

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
CARBON COUNTY (Dry Creek field)—		
Ohio Oil Co., Northern Pacific 1, ne sw 11-7s-21e	¶1½	4470

*Failures; †Junked; ¶Million cu. ft. gas.

Saturated cores were recovered at 4176 feet.

Two of Montana's major oil fields which have been almost at a standstill in drilling operations for the past two months, due to the cold weather conditions, each completed a well this week as a slight increase in other drilling operations is seen. Glacier Production Company's Williams 1, C SW SE 21-33n-5w, Cut Bank, Glacier County, swabbed in from 2937 feet for 44 barrels in the first 24 hours and 24 barrels in the second 24 hours. In the Kevin-Sunburst, Toole County, Wm. Fulton completed Thompson 1, NW SW NE 28-35n-3w, for 15 barrels at 1700 feet.

When R. C. Tarrant has completed Kelley 1, plans are to move the rig over to location Sayre 2, NE NE SW 26-3s-24e. Well is a west offset to Sayre 1, which finished for 40 barrels daily from the Dakota at 1010-27 feet.

Colorado Well Gets Show

South Park Oil Company, drilling on the Hartsel anticline, Park County, central Colorado, encountered another showing of oil this week in Lemar 1, NE NE SE 34-11s-75w. Oil was found in the shale at 4160 feet, estimated good for 35 barrels daily. Last week the well showed for around 25 barrels of light oil daily at 4070-74 feet. At 1501 feet the well showed for 2 barrels daily of 52 gravity green crude. Lemar 1 is located about three miles south of the company's State 1, SE SE SW 16-11s-75w, State 1 started at 80 feet above the top of the Pierre, while the Lemar 1 started 1900 feet in the Pierre.

Wildcat Campaign Looms

That a major wildcatting campaign is likely for South Vermillion Creek structure, six miles south of Hiawatha field, Moffat County, eastern Colorado, was seen this week. A deal was consummated whereby Anderson-Kerr Drilling Company and others will start operations for a test on this structure April 1. The group headed by Anderson-Kerr Drilling Company has more than 20,000 acres in the South Vermillion Creek area. It was assembled by W. A. Myers, one of the pioneers in the development of Hiawatha, and H. Leslie Parker, who discovered Big Muddy oil field in Converse County, Wyoming. Several permits were included in the block held by Wilber J. Gibson, a Denver attorney.

The test on South Vermillion will explore Tertiary beds. Recently a major discovery was made in Wasatch formation of the Tertiary age on Powder Wash dome, 18 miles east of Hiawatha, in two tests which completed as large oil wells. The second well flowed 77 barrels in 30 minutes through the 10¾-inch casing. Objective horizons are expected about 600 to 700 feet deeper on the South Vermillion structure than at Hiawatha.

Rotary equipment will be used to drill the test. W. A. Myers and E. S. Shaw, geologists for the group, are already in the field to spot the test. Probable location will be in the SW SW of 16 or in the SE NE of 17-11n-100w.

The Anderson-Kerr interests are also drilling at well on the Dry Creek structure. It has an option to drill on the Shell Creek structure, which adjoins the South Vermillion structure, and is three miles south and a little east of Hiawatha.

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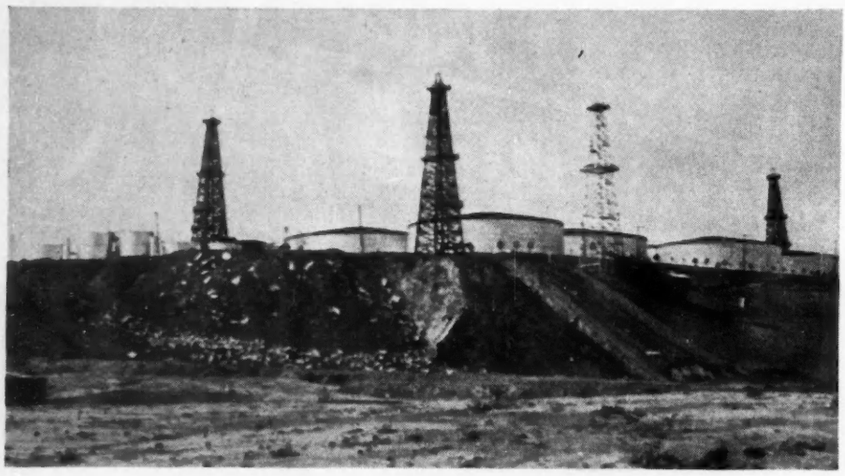


Lease tanks and wells, the end of the southern boundary of Signal Hill. The next outcrop is at Alamitos Bay, several miles farther south.

Wilmington Busiest

18 PRODUCING WELLS AVERAGE 400 BARRELS

WEEKLY STAFF REPORT

Los Angeles.—The new Wilmington field in Southern California near the Los Angeles Harbor is now the busiest area in California with a total of 60 operations ranging from locations to drilling wells. At last report, the field had a total of 18 producers averaging around 400 barrels a day per well of actual production. Not many of the wells are curtailed to any extent, other than necessary for the best production practice.

Total of 23 wells are actively drilling, there are 12 rigs up ready to spud, and 25 locations have already been spotted. Completion depth of the wells range from 3500 to 3650 feet, and its fairly easy drilling. The oil is heavy, less than 20 gravity, for the middle zone, which is the objective of most of the wells now drilling. In most instances, string of 8⅝-inch is cemented at around 3500 feet. Usually a string of 18⅝-inch is cemented as a surface shut-off, after a 20-inch string has been cemented at about 100 to 120 feet. From 500 to 700 feet of perforated is usually set.

Union Pacific Railway is soon to be the most active operator in the field. At last reports, Union Pacific had 4 drilling wells, 3 rigs and 11 locations. Each operation is a direct offset due to the fact that when Union Pacific took over the "Salt Lake Line" it came into possession of a number of small tracts of land in the general productive area of the new field. Due to the importance of its oil holdings, Union Pacific has secured the services of William Reinhardt, for 6 years manager of Kettleman North Dome Association. Reinhardt takes over his new duties April 15.

One of the most interesting wildcats in California is Barnsdall Oil Company's Rancho San Francisco 1, Section 26-4-17, near Newhall in Los Angeles County, which at last reports was making close to 400 barrels of 36 gravity oil, cutting 7 percent, with 300 pounds on the casing, and making about 500,000 cubic feet of gas. This wildcat has a total depth of 6472 feet, with 8⅝-inch cemented at 6160 feet. Total of 425 feet of 4¾-inch liner, including 315 feet of perforated, was landed on bottom. Tubing was run with packer.

Barnsdall Oil Company has a large acreage under lease in this general area, and since the company is now guaranteed commercial production in a purely wildcat venture, land in that general area is going on lease at a premium. The well is not a completion yet. Further production methods are being tried, and it is entirely possible still larger production will be developed.

Leases in this general area are much in demand and are being turned at rentals ranging around $1 a month plus the usual one-eighth royalty, if and when. Practically every acre in the general area has been tied up. Most of the acreage now being turned is considerably removed from the well.

New wells in the new Segundo field in Los Angeles County are attracting special attention. The Texas Company's Security 1, total depth 7253 feet, night of March 23 was flowing 175 barrels an hour, which is the best record so far for a new well in this new field. Union Oil Company's El Segundo 1, a recompletion, settled to a production of 1080 barrels a day of 27 gravity oil. Total depth is 7685 feet, with 7⅝-inch cemented at 7646 feet, and was drilled in 60 days. It is deeper than other wells drilled in the field, but it is not likely that a new zone has been penetrated. The well has a casing pressure of 760 pounds, and the tubing pressure is 460 pounds. Gas production is 700,000 cubic feet. Union Oil Company's drilling crew has been transferred to El Segundo 2, 660 feet west of the first well on the company's 240-acre lease. The new producer is located 1800 feet southeast of the Richfield Oil Company's discovery well.

In the Ten Section field, Shell Oil Company's K. C. L. A-78-30, Section 30-30-26, has been completed for 2500 barrels of 32 gravity oil at 8215 feet, with 9⅝-inch cemented at 7855 feet. The casing pressure is 950 pounds, while the tubing pressure is 150 pounds. This is the second completion for the new field, and the second well is located 2800 feet from the discovery well. The company is drilling three other wells in the field.

A new 10,000-foot hole for California is Arkelo Petroleum Company's Arkelo 1, in the Lerdo area in Kern County, Section 23-28-26, which has reached 10,050 feet, which has been coring in shale with streaks of sand. The last casing was 13⅜-inch cemented at 726 feet, giving the well a total of about 9300 feet of open hole. Hole is now being reamed to bottom to set a protection string of pipe.

In the Arvin area in Kern County,

CALIFORNIA

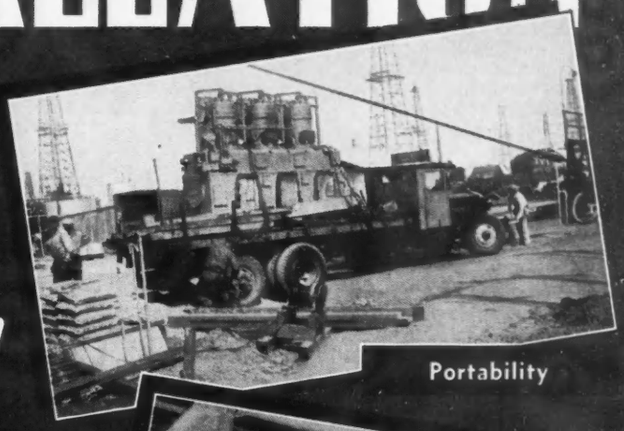
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BELRIDGE—		
Belridge Oil Co., Belridge 1	525	8400
KERN FRONT—		
Seskayden Oil Co., Sesnon 4-A	250	2908
Standard, Ward 4	175	1995
Italo Pet. Corp., No. 1	*	3408
KETTLEMAN HILLS—		
Kettleman No. Dome, No. 25-20J	2000	8650
Standard, No. 85-19J	250	8620
LOST HILLS—		
Standard, United 3	350	1407
McKITTRICK—		
Peters Royalty Co., Peters 2	50	1695
MIDWAY-SUNSET—		
C. C. M. Oil Co., No. 33	390	2635
Honolulu Oil Corp., No. 36	200	3750
McVAN AREA—		
Mines Oil Co., No. 4	*	2160
MONTEBELLO—		
Universal Cons.-Richfield, Nutt 1-J	125	5856
ROSECRANS—		
Barnsdall, O'Dea 10	800	7519
WILMINGTON—		
Bankline Oil Co., Tutor 1	360	3315
F. C. Hall, No. 1	350	3611
General Pet. Corp., Eubank 2	500	3600
Flint 1	480	3560
HUNTINGTON BEACH—		
Petroleum Co., No. 5	100	3896
Hamil Oil Co., Lewis 1	165	5155
EAST COYOTE—		
Dolicia Oil Co., Anaheim Union 2	175	3534

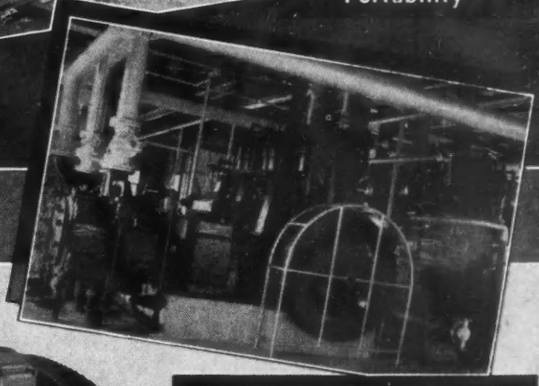
*Failures; †Junked; ¶Million cu. ft. gas.

LOW INSTALLATION COST...

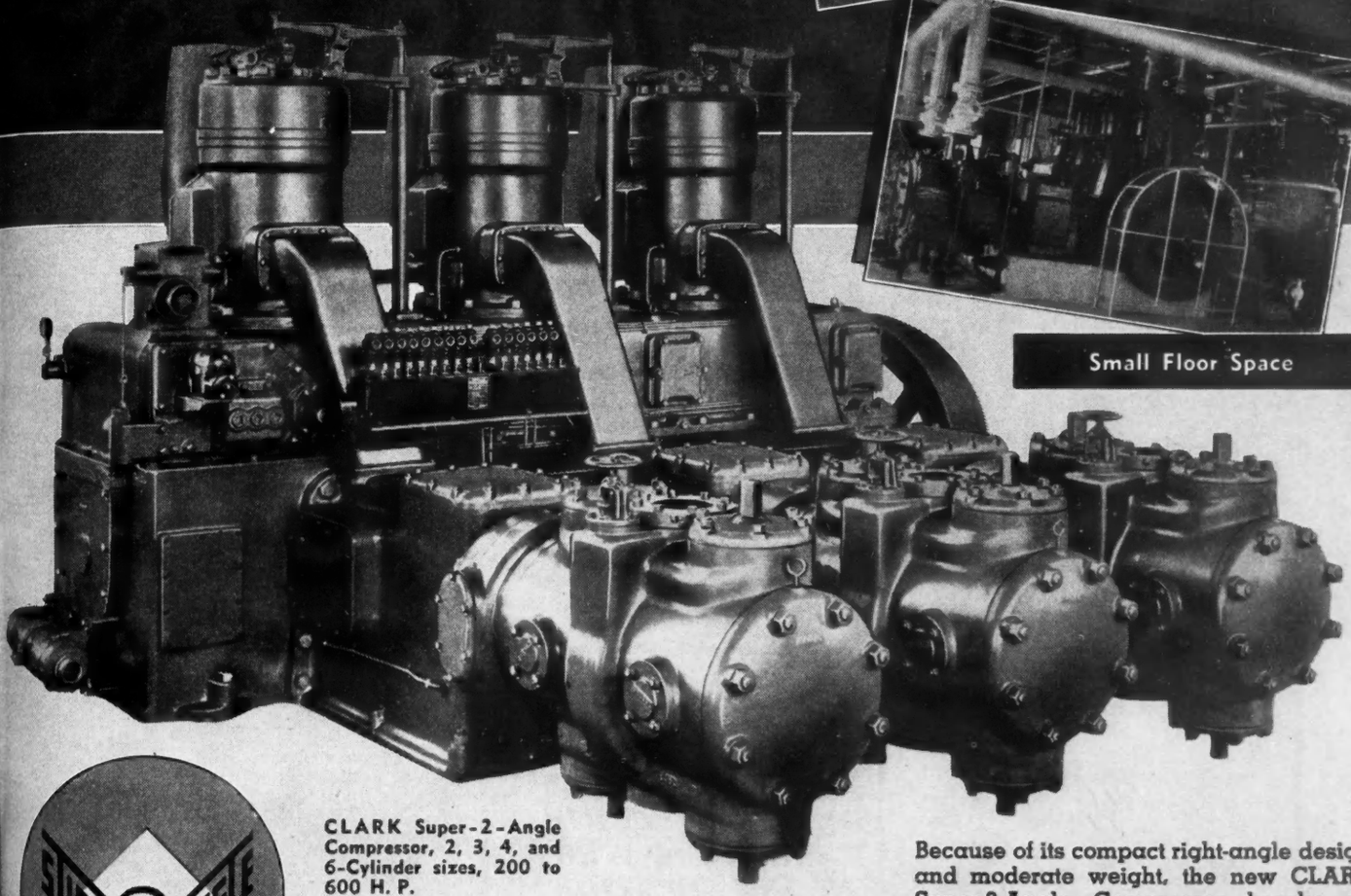
Due to Portability—Small floor Space-Small Foundation



Portability



Small Floor Space



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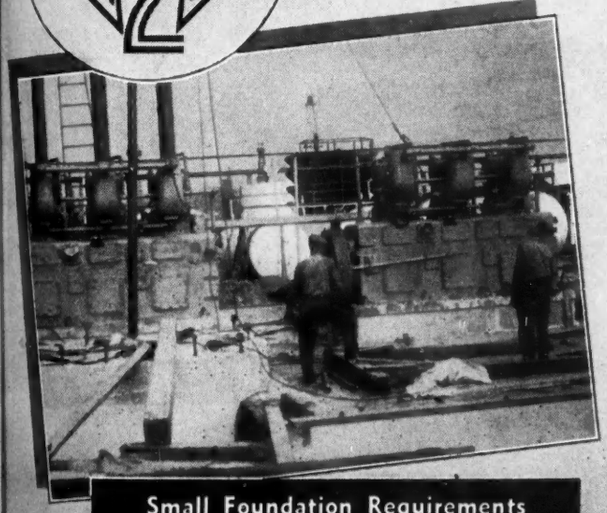
SUPER 2 ANGLE



Small Foundation Requirements

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CLARK

Bear Mountain Oil Company's Tejon 1, Section 21-31-20, has run into granite at 1669 feet, and is to be abandoned. From 1575 to 1642 feet, barren gray sand was cored. Top of granite was found at 1650 feet. It is understood the operating company is planning to drill a second wildcat in this area. Plans now are being made to abandon Tejon 1.

In Pyramid Hills, Kings County, Tide Water Associated Oil Company has decided to abandon Avenal 2, Section 35-23-17, with bottom at 2564 feet. Formation tester was run to 2500 feet and the zone from 2500 to 2564 feet was tested, showing a small blow of gas and a lot of mud.

At Gato Ridge in Santa Barbara County, Barnsdall Oil Company's Tognazzini 6, Section 9-8-32, bottomed at 2515 feet, is running liner, and a pumping test will be conducted. In this hole, 10¾-inch was cemented at 1859 feet.

In the new Adam field in Santa Barbara County, Hancock Oil Company-R. R. Bush Oil Company's No. 1, Section 16-10-33, has been completed for 1000 barrels with bottom at 4517 feet, plugged to 4425 feet. String of 8⅝-inch was cemented at 3010 feet, and liner was run.

In the Midway-Sunset field of Kern County, Section 8-11-23, Hancock Oil Company has secured a lease on 80 acres, and the first hole is to be drilled 200 feet north and 200 feet west from the southeast corner of the southwest quarter of the section mentioned.

Continental Oil Company is making real progress in its fishing job at its K. C. L. A-1, Section 8-27-24, with bottom of hole at 9545 feet. Bailer was lost in the hole at 9305 feet, but bailer has been recovered and driller is now milling on the sand line.

Union Oil Company's Bell 100 at Santa Fe Springs, the deepest test ever drilled in Los Angeles Basin, was drilling at 10,553 feet morning of March 24. During recent days there have been oil showings on the ditch, but no other details have come from the company.

Buckeye Widened

2 PRODUCE FROM DUNDEE; 61 STRINGS ACTIVE

MICHIGAN

WEEKLY STAFF REPORT

Mt. Pleasant.—The productive area of the new Buckeye field in Gladwin County, Michigan, apparently was widened this week when two tests ahead of present production showed commercially from Dundee lime.

Rowmor & Cryden Oil Companies' Shaffer 1, SEc SW SE SW 12, a mile east of the discovery and a half mile east of developed production produced 490 barrels in 15 hours from 3628 feet and was flowing 55 barrels hourly from 3632 feet without a 24-hour open test on March 24. Lime was logged at 3565 feet, slightly lower than the discovery well.

McClanahan Oil Company's Avery 1, SW NW NW 10-17n-1e, Billings Township, about one mile southeast of the Oard discovery in lower Buckeye Township, filled with 1200 feet of oil at 116 feet in Dundee and will be deepened.

Michigan development continued to center the Buckeye district, with 61 strings of tools active this week and 29 other locations.

May Not Have Proration

Proration may and may not be carried out in the new field. Pure Transportation Company and Simrall Pipe Line Corporation, the only two carriers in the new field, placed their combined capacities and markets at 18,000 barrels daily. Present production is between 14,000 and 16,000 barrels.

Operators in the area tentatively agreed to prorate if production exceeds 18,000 barrels and if 95 percent of the production in the field is signed to prorate. The plan as proposed would exempt 500-barrel or smaller wells with equal proration above to bring the field total to pipe line requirements. O. H. White, former umpire in Porter-Crystal proration days, now in charge of the Porter brine disposal system, will be recalled to handle the job if proration is carried out.

If the plan is placed in effect rules also will be laid down to require producing through tubing and not the 5-3/16 inch casing as is now generally the case. Limitations on acidizing also will be set up.

One Line Completed; Another Planned

Both Simrall Pipe Line Corporation and Pure Oil Company, have dropped the price of Buckeye field crude to $1.39½

MICHIGAN

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARENAC COUNTY—		
Devonian Oil Co.'s Peavy 1, ne sw se 4-20n-4e	425	2455
GLADWIN COUNTY—		
Michigan Producer's Frances 1, ne nw nw, 14-18n-1w	1400	3661
GRATIOT COUNTY—		
W. E. Ross' Standish 1, c nw nw, 9-10n-4w	¶5½	1000
Wiser Oil Co.'s Teed 1, c ne se 5-10n-4w	¶2½	971
ISABELLA COUNTY—		
Pure Oil Co.'s Woodin 1, sw se nw, 27-15n-6w	*	3720
Beutler 1, se nw ne, 33-15n-6w	490	3669
T. F. Caldwell, Inc.'s Regan 1, nw nw nw 36-16n-4w	*	3755
Fortney Oil Co.'s Battle 1, nw ne sw, 26-16n-4w	*	3754
MIDLAND COUNTY—		
Pure Oil Co.'s Corning 5, nw nw 12-13n-12w	1011	3441
MONTCALM COUNTY—		
Ide & Glavin's Park 1, c ne nw, 6-12n-7w	¶1½	1302
Jetter Dev. Co.'s Eckert 1, ne nw sw, 12-9n-6w	*	3120
MUSKEGON COUNTY—		
West Michigan's Wagner 1, c ne, 17-9n-14w	¶1	1290
OGEMAW COUNTY—		
Dunnigan & Fothergil's Christman 1, se se se, 19-22n-2e	140	2570
Newell & Wougher's Swain 1, ne sw se, 19-22n-2e	55	2560
Rowmor Corp.'s Thompson 1, sw se se 31-21n-4e	126	2635
TUSCOLA COUNTY—		
Smith Petroleum Co.'s Brink 1, sw ne nw 23-14n-7e	*	2919

*Failures; †Junked; ¶Million cu. ft. gas.

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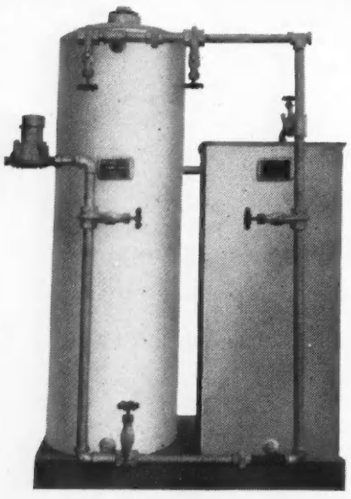

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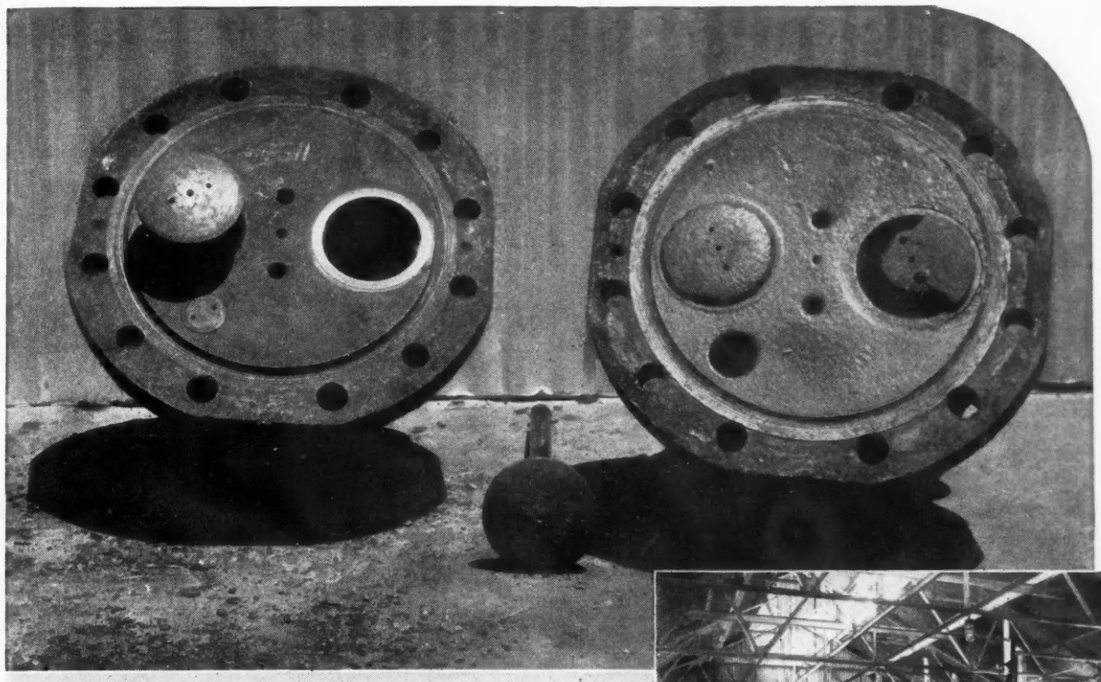

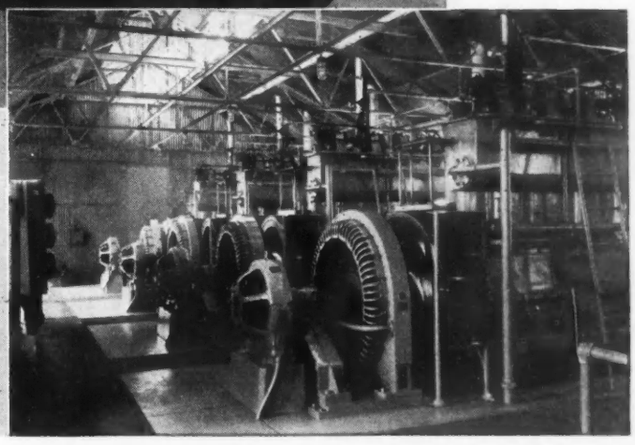

The head on the left has a Haynes Stellited exhaust valve seat insert, and is still in good condition after 14 months of continuous service. The cast steel head on the right was not protected with Haynes Stellite, and the exhaust valve, exhaust valve seat, and head are badly burnt after being in service for only 2 months. The cylinder heads are unretouched.

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per barrel or two cents below the Porter-Mt. Pleasant price.

Simrall Pipe Line Corporation has completed a new six-inch line from Buckeye to Mt. Pleasant, where it is tied into the company's Toledo system. Pure Oil Company is using rail shipments out of both Beaverton and Winegars at present, but will construct in April 22 miles of six-inch from Beaverton station to the Greendale tank farm. The tank farm not only offers storage, but gives a direct tie-in to either the company's line to Bay City lake shipment or into the Michigan-Toledo pipeline.

Post, Texas.—Post Refining Company, recently formed by T. E. Patton, Mineral Wells, and associates, is erecting a 600-barrel capacity crude skimming plant near Post. It will operate on high gravity crude produced in the nearby Boren-Emerald area, Garza County.

55 W. VA. PERMITS

Charleston, W. Va.—Fifty-five oil and gas drilling permits were issued during February, a decrease of 5 from the previous month, according to the monthly report of the oil and gas division of the West Virginia Department of Mines. Following is the county break-down of February permits: Ritchie 8; Kanawha and Roane 7 each; Boone 5; Calhoun 4; Gilmer 3; Braxton, Lewis, Lincoln, Marshal, Pleasants and Wetzel 2 each; Cabell, Clay, Doddridge, Hancock, Mason, Putnam, Tyler, Upshur and Wirt 1 each.

Important Deep Test

PENNSYLVANIA WILDCAT NEAR GAS IN SIDETRACKED HOLE

EASTERN FIELDS WEEKLY STAFF REPORT

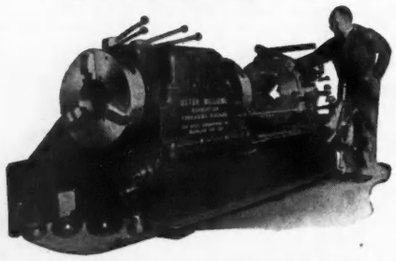
Pittsburgh. — The highly important deep test of William Snee and others on the Summit hotel lease on Chestnut ridge, south Union township, Fayette County, Pennsylvania, was entering the Onondaga sand below 6583 feet last week, bringing considerable interest to that section. The test is located on a huge structure miles distant from any gas well and the most eastern gas from the Devonian series in the lower fields.

The hole is a branch of a former test which reached 6611 feet where gas volume was in excess of 500,000 feet. The old hole bridged over below 5200 feet and it was impossible to run casing because of the crooked hole. The test now entering the Onondaga lime left the old hole at about 4250 feet and was drilled with a spiral bit and stem. Caving was greatly prevented in the latter stages by the cement spray bailer.

Seven-inch casing has been set to the bottom of the Tully lime at 6100 feet, drilling resumed to 6583 feet, and then suspended to cement 8-inch casing and to run the cement spray bailer in the bottom open hole. When this is completed, the hole will be deepened in an effort to determine what is in the vicinity of 6610 feet. In the old hole, the tools were 30 feet in the Onondaga when gas was struck and the lime was changing color. The gas was sweet and by chemical analysis totally different from that found in the Oriskany gas pool in Kanawha County, West Virginia.

In northwestern Ohio, announcement

for **EXTRA HEAVY-DUTY PIPE-THREADING AND BUCKING UP**



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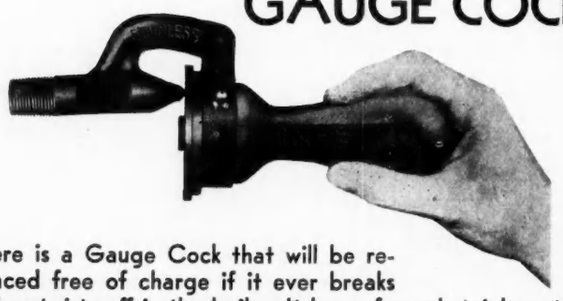
GUARANTEED
GAUGE COCK



Here is a Gauge Cock that will be replaced free of charge if it ever breaks off or twists off in the boiler. It has a forged stainless steel body. It has a REVERSIBLE lead disc which provides hundreds of perfect new seats at "A Twist of the Wrist" and is large enough to deflect the steam, preventing burns. Tested to 1000 lbs. Hydraulic grease fitting guarantees easy manipulation. See your supply store or write for Bulletin No. 9.

The INFERNO CO.

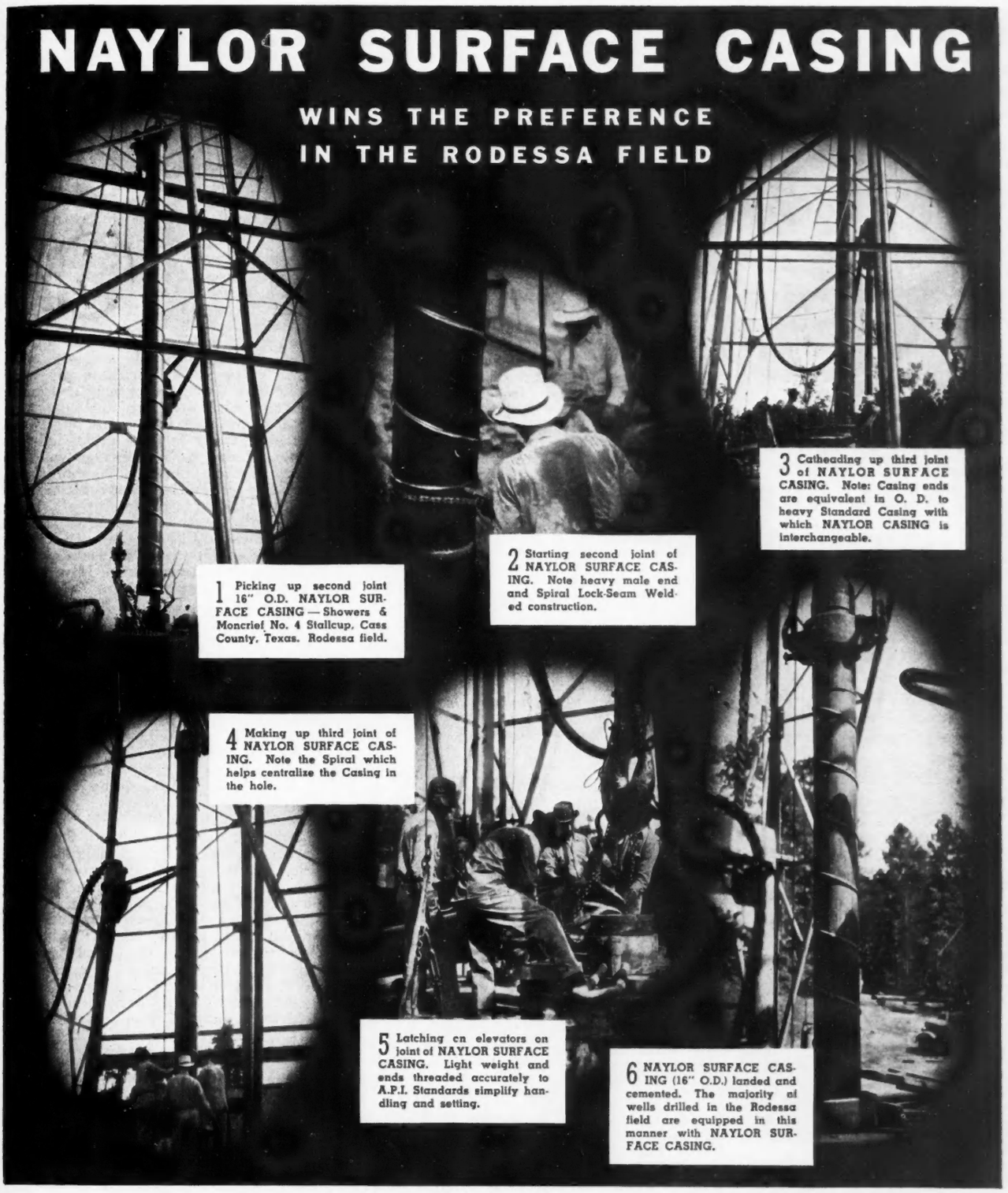
"MAKERS OF BETTER STEAM EQUIPMENT"

P. O. Box 1138 SHREVEPORT, LA.

HAVE YOU TAKEN THE PEACE PLEDGE?
Write for Information.

NAYLOR SURFACE CASING

WINS THE PREFERENCE IN THE RODESSA FIELD



1 Picking up second joint 16" O.D. NAYLOR SURFACE CASING — Showers & Moncrief No. 4 Stallcup, Cass County, Texas. Rodessa field.

2 Starting second joint of NAYLOR SURFACE CASING. Note heavy male end and Spiral Lock-Seam Welded construction.

3 Catheading up third joint of NAYLOR SURFACE CASING. Note: Casing ends are equivalent in O. D. to heavy Standard Casing with which NAYLOR CASING is interchangeable.

4 Making up third joint of NAYLOR SURFACE CASING. Note the Spiral which helps centralize the Casing in the hole.

5 Latching on elevators on joint of NAYLOR SURFACE CASING. Light weight and ends threaded accurately to A.P.I. Standards simplify handling and setting.

6 NAYLOR SURFACE CASING (16" O.D.) landed and cemented. The majority of wells drilled in the Rodessa field are equipped in this manner with NAYLOR SURFACE CASING.

Scenes like this are typical of Rodessa field where the majority of wells are equipped with Naylor Lockseam Spiralweld Threaded Surface Casing.

The reason for this decided preference is the distinctive Naylor structure itself. The Spiral on the outside helps centralize the casing in the hole. It provides a breathing space around the Casing, thus insuring a better cementing job.

Handling and setting are simplified by light weight, uniform lengths of 30 feet—or as otherwise specified—and ends threaded accurately to A. P. I. Standards. Casing ends are equivalent in O. D. to heavy Standard Casing with which Naylor Casing is interchangeable.

In other words, Naylor gives you distinct benefits and the installed cost is less. ● Naylor Casing is furnished in Standard Diameters of 13⅜" O. D., 16" O. D., 18⅝" O. D., 20" O. D., and 21½" O. D. ● For complete information and prices, call us or our distributors.

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FORT WORTH, TEXAS, AND BRANCHES
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Ten years and more is a long time—a long time for a single set of valve cups to give service on an average of three hours a day—**six days a week!** Yet that's the record set by "Darcova" in a well in Tulsa, Oklahoma. We'll send you complete details if you're interested—and you surely **should** be . . . if you want to benefit by the service and the savings for which these ORIGINAL COMPOSITION VALVE CUPS are famous!

DARCOVA
(Orange Label) the standard for more than thirty years under severe service at all depths.

DARVAL (Blue Label) for super-service in wells to approximately 2,000 feet in depth.

DARFLEX (Green Label) the popular favorite for wells to 800 feet in depth.

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Williamsport, Pa.

that N. L. Stevens is spudding a test in Harrison township, Henry County, scheduled for the Trenton sand, is bringing interest to that section. The operators plan other tests in this locality if the wildcat proves successful.

Leasing Along the Wabash

Leasing activity inspired by encouraging showings of oil three weeks ago in Pure Oil Company's tests in Clay and Wayne counties, in the basin area of Illinois, has spread south and east across the Indiana state line. Testing experts armed with seismographs are covering many sections of southwestern Indiana, and land is being leased on both sides of the Wabash River from Oaktown to 10 miles south of Vincennes.

Largest eastern fields' producer of the week was that of Carnegie Natural Gas Company, the second test on the J. W. Milliken farm, Center township, Greene County, southwest Pennsylvania. With a total depth of 3184 feet, it produced 105 barrels the first day.

Another good producer was that of Kachelmacher Estate, No. 18 on the Hemlock Coal Company lease, Monroe township, Perry County, Central Ohio. At 3625 feet, the well made a good showing of oil naturally in the Clinton sand, and after a shot of 90 quarts it produced 60 barrels the first 24 hours.

Pure Oil Company completed the largest gasser of the week on the Ernest Epply lease, Brush Creek township, Muskingum County, Ohio. It was drilled through the Clinton sand at 4060-4106 feet to 4103 feet where it produced 3,365,000 feet of gas naturally. Rock pressure was at 1000 pounds.

EASTERN STATES

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
OHIO		
ATHENS COUNTY—		
B. Johnson, Anna L. Snow 5	¶1	915
Ohio F. G. Co., Arthur Brooks 1.	¶	1687
CARROLL COUNTY—		
Hannum O. & G. Co., W. S. Wilson 1	3	1257
HOCKING COUNTY—		
Joe Thomas & Co., W. W. Ackers 12	24	3479
HURON COUNTY—		
Williams & Co., L. & F. Chapin 1.	¶	295
LICKING COUNTY—		
Wehrle Co., John Murphy 1	4	750
Ohio F. S. Co., W. H. Gutridge	*	2693
MEIGS COUNTY—		
Ohio F. G. Co., Birdie Lesher 1	¶	769
Robert Cozart 1	¶	2091
Daniel Sayre	¶	2090
MONROE COUNTY—		
Jim Run O. & G. Co., Susan Haught 1	¶	1636
MUSKINGUM COUNTY—		
Pure Oil Co., Ernest Epply 1	¶3½	4103
PERRY COUNTY—		
Bell Oil Co., Sadie R. Seidenfeld 2.	40	3715
Kachelmacher Estate, Hemlock Coal Co. 18	60	3625
PORTAGE COUNTY—		
Cashdollar & Co., J. T. Henderson 1	*	4744
VINTON COUNTY—		
Powers, Cameron Clark 11	5	1673
WAYNE COUNTY—		
Ohio F. G. Co., Samuel Speicher 1.	¶	4186
WEST VIRGINIA		
RITCHIE COUNTY—		
F. R. Ball et al, Strickler Heirs 3.	2	1965
Dr. E. D. Moyers, Harry Andrews 1	½	1868
John Trexler et al, W. S. Corbin 1.	¶	1736
WOOD COUNTY—		
Tri-State Oil Co., Jacob Bauers 1.	*	1854
KENTUCKY		
McLEAN COUNTY—		
Ohio, G. B. McManama 12	5	....
Clark & Snyder, Humphreys 2	15	....
OHIO COUNTY—		
Rough River Corp., Jim Knoll 1	*	....
PENNSYLVANIA		
GREENE COUNTY—		
Carnegie Nat. Gas Co., J. W. Milliken 2	105	3184
Dale Brand 1	¶	2100
WARREN COUNTY—		
Potter Dev. Co., D. Spetz 1	*	5165
Sylvania Corp., M. W. Jamieson 1	*	4823

*Failures; †Junked; ¶Million cu. ft. gas.

Locations for Deep Tests

Deep well locations made last week on the outskirts of the Oriskany pool of West Virginia adds interest to that section. Hays Oil & Gas Company has made a location for a test on the Leon Williams farm, Elk district, Kanawha County. It is 1¼ miles due east of the W. T. Copen dry hole and one mile north of the C. B. Graham gas well. Columbian Carbon Company has made a test in this district on the Robert N. Orth farm and for another on the Octavia Pauley farm a half-mile west of the Henry A. Walker gas well. In Poca district, United Carbon Company has made a location for a test on the E. M. Burdette and others lease a half-mile north of the W. P. Moss well, which will be on the outskirts.

Two completions of wildcats as failures marked activity in the New York-Pennsylvania deep sand gas field. Both were in Warren County, Pennsylvania. Potter Development Company's wildcat on the D. Spetz farm, Pittsfield township, was abandoned at 5165 feet. It was drilled through the Red Medina at 4961-5085 feet, and the White Medina at 5126-5137 feet after failing to find the Oriskany sand. The second failure was the wildcat of Sylvania Corporation on the M. W. Jamieson farm, Kinzua township. At 4823 feet, it flowed salt water at the rate of 5 barrels per day.

Outside tests in this field are: McHenry and others drilling at 2896 feet on the Stellman farm, Rockland township, Venango County; Potter Development Company drilling at 3085 feet on the J. Chapin farm, Rockdale township, Crawford County, and Potter building a rig on the N. D. Dahl farm, Hayfield township, Crawford County. All are in Pennsylvania. Allegany and Steuben counties are sharing the activity in the New York section of the field, each with three operations.

Bradford, Pa.—Members of the Bradford District Pennsylvania Oil Producers Association will hold their seventh annual meeting here March 30. A dinner at 6:15 p.m. will precede the meeting. Principal business will be election of the 1937 board of directors. Members of the nominating committee are C. F. Stevenson, C. E. Streeter and A. E. Booth.

Tulsa.—The Texas Company was host March 23, to all employes in the land, producing, pipe line and refining departments who have been with the firm 10 years or longer. Dinner was served at 7:00 p.m. at Oakhurst Country Club, followed by an entertainment program. B. H. Anglin, assistant manager of the personnel department at New York City, explained a new insurance plan to supplement benefits promised the workers under the federal security act.

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New TRIMO ALLOY PIPE WRENCH
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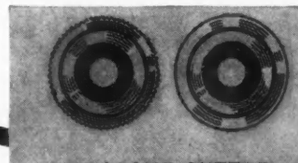

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Thin Blade Special Analysis Steel — silvered to resist rust. Identified by Red Hub. Fit Trimo Barnes Saunders Cutters.

TRIMO CHAIN WRENCH

Replaceable parts, quality steel, make this chain wrench safest and most serviceable.

THE OIL WEEKLY REPORT ON IMPORTANT

Wildcat Tests

ALABAMA

CHOCTAW COUNTY—Joe Modisette et al's McCorvey 1, se sw sw 20-9n-2w, completing rur, td 105 ft.

GREENE COUNTY—Willis & Payne's R. L. Lett 2, se nw 6-21n-2e, dk.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, nw sw 9-3n-29e, sd 4975 ft.

MOBILE COUNTY — Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

CLARK COUNTY — McLarry & Carlin's Bierne Lbr. Co. 1, ne se ne 22-10s-21w, rur. J. G. Wooten's Sparkman 1, sw nw 1-11-20, sd 545 ft. M. W. Martin's C. L. Cabe 1, nw nw 14-10-20, mim.

CLAY COUNTY—Nelson et al's Underwood 1, se sw ne 4-20-8, sd 800 ft.

DALLAS COUNTY—Walter Lown's Atkinson 1, nw se 7-10-13, dry abn, td 2763 ft.

GRANT COUNTY—Wallace & Staples' W. F. Davis 2, se se nw 23-6-15, fsg drill stem 2380 ft.

HEMPSTEAD COUNTY—Root Pet. Co.'s Drake 1, se nw 23-14-24, elev 311 ft, base massive anhydrite 2905 ft, dr 3547 ft shale. J. R. Birdwell's Duckett 1, 24-13-24, 10-in csg 100 ft, dr 1530 ft shale. Sheppard & Todd's Smith 1, ne sw se 1-11-25, sd 600 ft.

LA FAYETTE COUNTY—King Drlg. Co.'s Walcott 1, c ne sw 36-19-26, 12½ in csg 488 ft, dr 3660 ft red beds. A. M. Neely's Meek 1, ne nw 35-19-25, sd 3180 ft.

LITTLE RIVER COUNTY—J. G. Strahan's Dierks Lbr. Co. 1, 21-12-28, sd 2050 ft.

MILLER COUNTY — Nivla Oil Corp.'s Merchants & Planters Bank 1, se se 18-15-26, spd finishing rur. Thad Bryant's Commercial Bank 1, 20-18-28, lcn. W. M. Layton et al's Fee 1 to 10, on Rector land, inclusive, 17-20-28, lcns. Allred & Allred's E. A. Rector 1, w½ w½ 16-20-28, lcn. Tony DeGrazier's E. A. Rector 1, sec 17-20-28, lcn. Kimbrough et al's Capps 1, ne sw 11-20-28, dk.

NEVADA COUNTY—Benedum & Trees Oil Co.'s Block 1, ne se 9-14-20, elev 287 ft, cored sandy lime, so 4990-5012 ft, dr 5136 ft. Mary Jackson 1, nw ne 9-14-20, 1500 ft oih, cemtd csg 2134 ft, wosr, td 2138 ft; Mary Jackson 2, ne ne 9-14-20, rur. W. S. King's Wren 1, sw ne 6-13-22, sd 2610 ft. Walter Lown's P. B. Grayson 1, sw se 12-14-20, sd 2200 ft. C. B. & F. Pet. Co.'s Haynie 1, 5-14-20, sd 1170 ft. A. M. Lacey's Bennett 1, sw ne 28-14-22, rur. Axel Larson's J. T. Wortham 1, sw nw 29-13-21, sd 2340 ft.

UNION COUNTY—Lion O. R. Co.'s Morgan 1, 18-18-17, tested hfo in 2 drill stem tests, fsg, td 5559 ft, Permian. Ark. Southern Oil Co.'s G. G. Simmons 1, nw nw 15-18-13, spd. Sklar Oil Corp.'s Cordell 1, ne se sw 24-17-16, mim.

CALIFORNIA

FRESNO COUNTY

CANTUA CREEK — Western Gulf's S. P. Land 3, 3-17-15, td 8531 ft, redr to 8500 ft, co.

KERN COUNTY

LERDO—Arkelo Pet. Co.'s Arkelo 1, 23-28-26, td 10,030 ft, r.

KERN FRONT—Barnhart-Morrow's No. 1, 3-28-27, formerly Lloyd Oil Co., td 2630 ft, to plug and redr. Seskayden Oil Co.'s No. 3-A, 17-28-27, td 2890 ft, plug 2870 ft, pumping to sump.

ARVIN—Bear Mountain Oil Co.'s Tejon 1, 21-31-30, dr shale 1670 ft. General Pet. Corp.'s Arvin 1, 26-31-29, td 7462 ft, plug 7453 ft, sd.

SO. MARICOPA—E. A. Bender's Robinson 1, 14-10-23, td 1235 ft, plug to 550 ft, sd. Trans-Line Pet. Corp.'s No. 1, 3-10-23, sd 662 ft.

PREMIER—Bojaki Oil Co.'s Bowes 1, 28-27-27, dr sandy shale 1860 ft.

GREEN FIELD—British American's Smith 1-A, 21-31-27, sd 1128 ft.

GRAPEVINE—Buffalo Oil Co.'s Tejon 1, 5-10-19, sd 4452 ft. Ohio Oil Co.'s Title Ins. D-1, 21-11-19, dr shale 7162 ft. Reserve Oil & Gas Co.'s Ritchie 33-1, 33-11-19, td 6030 ft, plug 4990 ft, sd; Tejon 33-2, td 4505 ft, redr to 4476 ft, sanded up, liner collapsed, injecting gas from No. 33-3, flowing mud and sand.

SAN EMIDIO—I. L. Burch's No. 1, 3-10-23, td 2590 ft, rep equip. Union's No. C-1, 34-11-22, dr shale 4511 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL ..EEKLY.

—*dry hole abandoned well.*	owdd—*old well drilling deeper*
‡—*salt water °completions:.*	owpb—*old well plugging back.*
†—*junked and abandoned.*	pb—*plugged back or plugging back.*
¶—*million 'eet o' gas.*	r—*reaming.*
abd—*abondoned.*	rog—*rig on the ground.*
bbls—*barrels.*	rur—*rigging up rotary tools.*
br—*building rig.*	rust—*rigging up standard tools.*
b.s.—*basic sediment.*	sd—*shut down.*
csg—*casing.*	sdtr—*sidetracking.*
co—*cleaning out.*	sg—*show gas.*
dd—*drilling deeper.*	si—*shut in.*
dk—*derrick.*	so—*show oil.*
dr—*drilling.*	sog—*show oil and gas.*
fsg—*.shing.*	spd—*spudding.*
ft—*'eet.*	sr—*straight reaming.*
hfw—*hole 'ull o' water.*	sw—*salt water.*
in—*inches.*	td—*total depth.*
lcn—*location.*	ur—*underreaming.*
m—*milling.*	wih—*water in the hole.*
mim—*moving in materials.*	wo—*workover.*
mit—*moving in tools.*	wocs—*waiting on cement to set.*
mot—*milling on tools.*	wosr—*waiting on standard rig.*
n, s, e, w—*north, south, east, west.*	
oih—*oil in hole.*	

WASCO—Continental Oil Co.'s KCL A-1, 8-27-24, td 9545 ft, fsh. Seaboard Oil Corp.'s No. C-1, 26-27-24, dr shale 4783 ft.

ROSEDALE—Continental Oil Co.'s KCL B-1, 12-29-26, dr shale 5200 ft.

DEVIL'S DEN—Den Pet. Co.'s No. 1, 20-25-19, td 3280 ft, co. Lube Oil Co.'s No. 1, 2-25-18, td 4288 ft, r.

JASMINE—Doyle Pet. Co.'s Quinn 1, 15-25-27, td 2956 ft, plug 2882 ft, bailing sand; No. 2, dr shale 1560 ft.

EDISON—East Edison Oil Co.'s No. 2, 22-30-30, dr shale 960 ft.

ELK HILLS—Elk Hills Pet. Co.'s No. 1, 14-31-28, td 5890 ft, to deepen.

NO. KERN RIVER—Hub Oil Co.'s No. 1, 8-28-28, rig.

RIO BRAVO—Mohawk Pet. Co.'s KCL 1, 23-29-25, dr shale 5130 ft. Petroleum Securities Co.'s Wright 1, 23-29-25, spud and sd. Tide Water Associated's KCL 1, 30-29-25, dr gray shale 8932 ft. Union's Kern Co. 1-34, 34-28-25, rur.

ROUND MOUNTAIN—Pageman & Hennes' Pagehen 1, 10-28-29, foundation.

TEN SECTION—Shell's Canal 21-14, 14-30-25, spud March 17, dr. Super & Union's KCL 8, 11-30-26, td 10,409 ft, wocs 7 in at 10,380 ft.

GOSFORD—Signal Oil & Gas Co.'s KCL 1-A, 21-30-27, dr gray sand 7235 ft.

WEST MOUNTAIN VIEW — Sunset Oil Co.'s Sunset Starr 1, 17-30-28, lcn.

McGUNDEN—Superior and A. T. Jergins' Crome Com. 1, 36-29-28, dr shale 2476 ft.

BAKERSFIELD—Wilshire Oil Co.'s Cohn 1, 35-29-27, lcn. (Location made in sec 36 not to be drilled).

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 1, 22-3-1, td 7418 ft, wocs 8⅝ in at 6580 ft.

KINGS COUNTY—Central Calif. Utilities' Kettleman-Lakeview 3, 11-23-19, td 1196 ft, tested wet, plug 1190 ft. A. S. Clare's Laymance 1, 20-20-22, rur. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, foundation. Pyramid Prod. Co.'s Spreckles 2, 16-24-18, lcn. Kettleman View Oil & Gas Co.'s No. 1, 9-22-19, td 4787 ft, wocs 6⅝ in at 3400 ft. T. G. Norell's Guess 1, 7-21-21, td 4787 ft, to rebuild dk. Glen C. Stone's Teeter 1, 25-20-20, td 985 ft, wocs 8⅝ in at 790 ft. Tide Water Associated's Avenal 2, 35-23-17, dr gray sand 2517 ft, silty oil sand picked up from 2235 to 2456 ft.

SAN BENITO COUNTY—Tide Water Associated's Murphy Ranch 1, 5-12-4, dr hard shale 6645 ft.

SAN JOAQUIN COUNTY—Coast Explor Co.'s (Rio Vista) TF I-1, 2-3-4, spud March 14, dr. Standard's McDonald Farms 3, rig.

SOLANO COUNTY—Amerada Pet. Corp.'s

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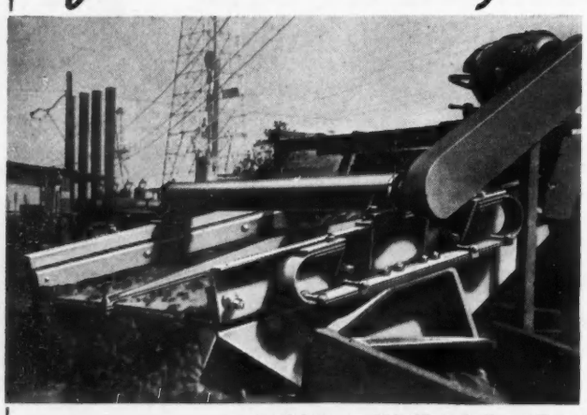
for Reconditioning Rotary Mud



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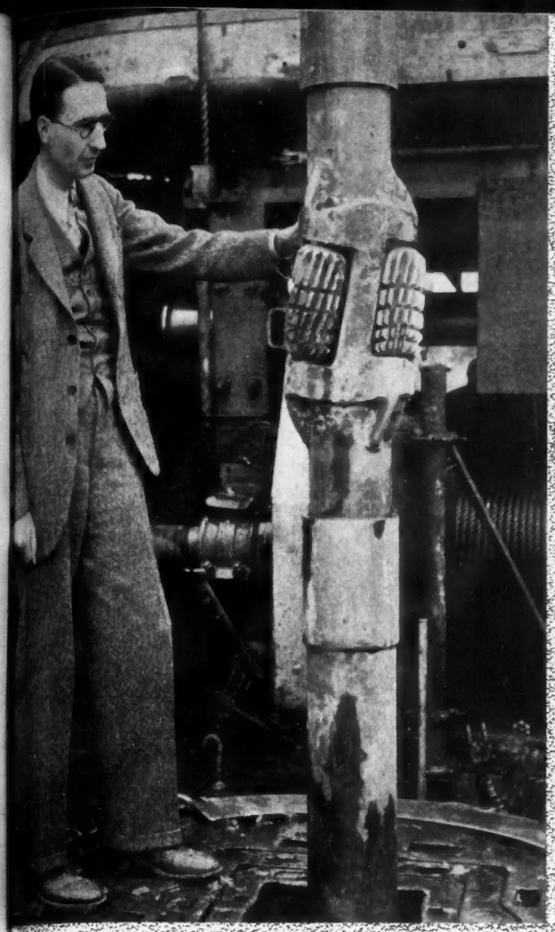

By Golly WE SURELY HAVE DONE IT— IN THE GRANT REAMER

Photographs show Grant Reamer in actual usage on Bandini Oil Co.'s Kammerdiner No. 1, two miles east of Brea, California. Above is shown Don Weaver, Field Manager of the Wilshire Oil Co., who drilled this well. Below, the crew, reading from left to right: John Smith, *Helper;* Wm. Neely, *Chief Engineer of Construction;* Will Nichols, *Petroleum Engineer;* Lee Coe, *Grant Oil Tool Co.;* Jay Hill, *Tool Pusher;* O. Hardcastle, *Derrick Man;* J. K. Holt, *Helper;* S. O. Newton, *Driller;* J. T. Ryan, *Helper.*

Don Weaver says: ***"We have been using your Grant roller-bearing straight reamer with the helical type cutter, and have had excellent results and absolute satisfaction.***

"The development of this type of cutter has solved the problem of using a straight reamer in the drilling of crooked holes, and it is the only type cutter which will not run flat during diverted hole drilling."

The exact inclination of Grant reamer cutters — the helical cut — the work which they perform and the manner in which that work is performed — are not just matters of pure theory but, instead, exactly track the only proven theory of straight hole drilling developed throughout all time. The incorporation of specially designed and constructed roller bearings in the reamer cutter, bearing directly upon reamer cutter pins, is the direct answer to why Grant Reamer cutters do not run flat during any drilling operation. The next time you run a reamer, make it a Grant.

GRANT OIL TOOL CO.

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Drouin 2, 25-4-2, dr shale 600 ft; Mayhood 1, 35-4-2, td 4533 ft, preparing for prod. test.

TULARE COUNTY—J. W. Alford's Williams 1, 28-16-23, sd 1023 ft. R. R. Ellis' Ellis 1, 20-24-23, rig. E. P. Jennings' No. 1, 4-24-23, td 2709 ft, plug 2685 ft, sd; No. 2, 33-23-23, rig.

MONTEREY COUNTY—Amil A. Anderson's No. 1, 15-24-14, dr shale 511 ft. Shell's Branch 2, 34-24-10, dr shale 7191 ft. Texas Co.'s Dunphy 1, 30-19-7, td 3602 ft in shale, formation tester showed no fluid.

SAN LUIS OBISPO COUNTY—Aviation Oil Co.'s Britnall 1, 10-11-35, sd 1639 ft. Barnsdall's KCL A-1, 1-32-20, dr shale 2100 ft. R. A. Foster's McKee 1, 2-32-23, sd 5087 ft. Gretna Corp.'s Miano 1, 25-30-10, material. A. T. Jergins Trust's Indian Knob 1, 26-31-12, td 1438 ft, wocs 8⅝ in at 1436 ft. Pismo Pet. Co.'s No. 1, 5-32-13, dr shale 3090 ft. Temblor Oil Co.'s No. 1, 22-32-21, rur. United Foreign Oil Co.'s Panorama 2, 2-32-21, sd 2435 ft.

SANTA BARBARA COUNTY — Nine Springs Oil Co.'s Brinkerhoff 1, 9-7-30, dr shale 3084 ft. Todos Santos Oil Co.'s No. 1, 29-9-34, td 2635 ft, co to 2300 ft, bailing. Union's O'Donnell 1, 21-10-34, dr shale 1741 ft. Valley Oil Co.'s Chief 1, 20-9-34, dr shale 1760 ft. Other wells sd.

VENTURA COUNTY—Continental Oil Co.'s Casitas 1, 7-3-23, td 5644 ft, fsh. El Rancho Oil Co.'s Elkins 1, 9-3-19, td 5107 ft, swabbing water, trace oil. Honolulu Oil Corp.'s Hobson 1, 23-3-21, td 6744 ft, plug 3600 ft, co. Speik Oil Co.'s Speik 1, 35-5-19, dr shale 1980 ft. Vaca Oil Explor. Co.'s Calif. Lands 1, 6-1-21, sd 2830 ft. Ventura Explor. Co.'s Sexton 1, 30-3-22, sd 9525 ft, to drop from report.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall Oil Co.'s Rancho S. F. 1, 26-4-17, td 6472 ft, washed with mud solvent, swabbed, made a few flows at estimated 150 to 200 bbls day rate, no water, good gas pressure. May deepen or make other production tests. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, dr hard brown shale 4655 ft.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, dr shale 550 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, sd 3995 ft.

ARTESIA—Caltana Corp.'s Montana Land 1, 11-4-12, rig.

NO. LONG BEACH — Geo. L. Clayton's Clayton 1, 32-3-12, dr shale and sand 3791 ft.

FOX HILLS—Country Club Oil Co.'s No. 1, td 2930 ft in sand and shale, rep. machinery.

EAST WHITTIER—Driller's, Inc., No. 1, 22-2-11, td 1640 ft, plug 846 ft, wocs 8⅝ in at 846 ft.

CLEARWATER—H. Heide's Rogers 1, 20-3-12, rig partly rigged up.

DAVIDSON CITY—Hilldon Oil Co.'s Flood Control 1, 11-4-13, on production test pumped 80 bbls 24.6 gravity oil, cutting 3 percent mud, may deepen.

WEST COYOTE—Hogan Pet. Co.'s No. 1, 23-3-11, spud 3/20, dr.

PUENTE—Honolulu Oil Corp.'s Butler 1, 15-2-10, dr hard brown shale 3734 ft.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr shale streaks hard sand 1350 ft.

HERMOSA BEACH—Leora Oil Co.'s No. 1, 31-3-14, dr hard sandy shale 5350 ft.

PALOS VERDES—McClaren Bros.' No. 1, 27-4-14, td 3970 ft, r to set 8⅝ in at 1805 ft.

ROSECRANS—Shell's McKinley 4-1, 20-3-13, td 7744 ft, ran formation tester, recovered 50 stands of mud, oil and a little gas.

HAWTHORNE — Signal Finance Corp.'s Woods 1, 10-3-14, td 9395 ft, plugging and swabbing to locate water.

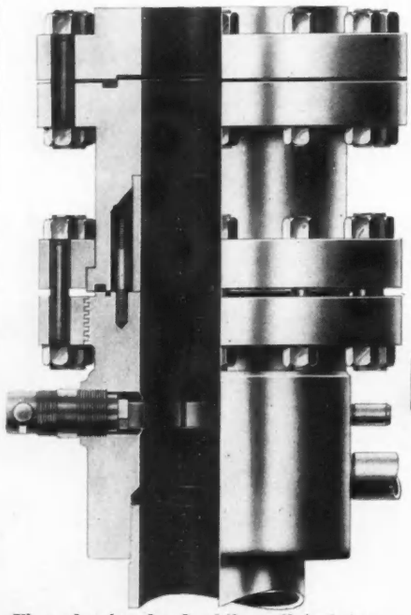
Orders Roll In for the New

GULFCO

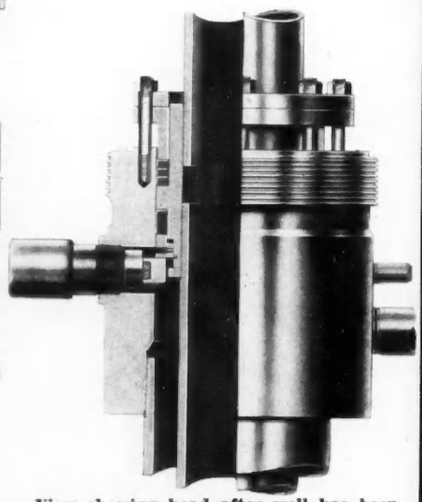
TRUE FULL-HOLE RETRACTABLE SEAT

CASING HEAD

Type "J"



View showing head while well is being drilled and also position of dogs while casing is being run.



View showing head after well has been completed.

Eliminates all hampering obstructions to drilling or setting operations. Not necessary to use blowout preventer of larger size or to rebore to larger size to take care of suspension.

SEAT IS EASILY ADVANCED TO A POSITION FOR SUPPORTING THE INNER CASING by simply making a half turn of a small lever on outside of head. Dogs form a supporting ring of enormous strength. Retractable seat normally remains in a housing in the inner wall of seat.

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KANSAS

BARTON COUNTY — I. T. I. O. Co.'s Schrepel 1, se se ne 26-20s-11w, ur 6-in csg 3261 ft. Herndon Drlg. Co. & Morgan & Flynn's Robenseifer 1, cnw 7-8s-15w, sd 430 ft. Stanolind's Burmeister 1, ne ne sw 33-19s-11w, sd 3365 ft. C. L. Price et al's Kraft 1, sw nw ne 10-17s-11w sd 2555 ft. C. L. Carlock's Leibel 1, se ne se 18-18s-11w, set 12-in csg 684 ft, dr 1520 ft. Missouri Valley O&G Co.'s Peach 1, se se se 24-16s-14w, dr 2300 ft. Ralph Wixon & Union O&R Co.'s Frederick 1, nw nw nw 12-16s-13w, dr 400 ft. John Burton et al's Wendel 1, ne ne ne 13-19s-11w, td 3378 ft, D&A. S. A. Murphy's Beck 1, ne ne ne 17-17s-12w, lcn. Geo. Dickey et al's Boger 1, se se ne 15-16s-13w, cel.

BUTLER COUNTY—A. M. Landon et al's McCaig 1, ne ne se 13-28s-6e, dr 2345 ft. C. L. Seibel et al's Bisagno 1, se se nw 24-25s-6e, spd. Vickers Pet. Co.'s Voth 1, cnl s½ sw ne 32-24s-4e, ru. Rex & Morris' Gilmore 1, se se ne 13-25s-6e, lcn abd.

CHASE COUNTY—Hanna et al's Brothers 1, se se nw 25-20s-8w, dr 3110 ft.

CHAUTAUQUA COUNTY — W. M. McKnab's Griffith 1, sw sw sw 11-22s-10e, ru mach. E. I. Shaffer's Nuckalls 1, nw nw nw 12-33s-9e, dr 550 ft.

COWLEY COUNTY — W. M. McKnab's Weldschmidt 1, sw sw nw 18-34s-6e, sso 2949-52 ft. McKnab's Community 1, cne nw 14-34s-3e, dr 3485 ft. Wentz & Amerada's Rush 1, nw sw sw 36-34s-6e, dr 1760 ft. Tom Palmer's Lowe 1-A, sw se se 3-32s-5e, dr 540 ft. Ryan Consolidated's Couch 1, sw sw se 13-30s-5e, dr 175 ft. Elmer Ash et al's Bolack 1, nw nw se 22-32s-6e, cel.

DECATUR COUNTY—Winkler & Koch's Vessey 1, cnw se 26-3s-26w, td 4149½ ft, D&A. Bruce et al's Newbald 1, cne sw 34-2s-28w, lcn.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Murphy Oil Co.'s Weisner 1, se se sw 12-14s-19w, 1 bbl wtr 3295-3300 ft, ur 8-in csg 3470 ft. Lario O&G Co.'s Cress 1, ne ne ne 13-11s-17w, td 3302½ ft, 3150 ft oih 3½ hrs, testing. Empire's Hall 1 se se se 2-12s-17w, dr 3559 ft. Sunray Oil Co.'s Befort 1, ne ne ne 11-14s-20w, sd 3903 ft. Mazda Oil Co.'s Henderson 1, sw sw ne 27-11s-18w, ru. Noble Pet. Corp.'s O'Laughlin 1, nw nw se 13-12s-19w, dr 1015 ft. Earl Wakefield, Putnam Morg Co. 1, se se nw 32-15s-17w, dr 325 ft. Ted Kors et al's Koblitz 1, se sw nw 23-12s-18w, p 13 bbls oil and pump off.

ELLSWORTH COUNTY — Frost et al's Dolechek 1, ne ne sw 36-14s-8w, dr 1055 ft.

FINNEY COUNTY—Keith & Olson Drlg. Co.'s Ely 1, nw nw sw 34-22s-29w, cor.

GRANT COUNTY—Columbian Fuel Co.'s Gray 1, cse 3-29s-35w, td 2760 ft, shot 40 qts 2710-60 ft, 4,000,000 cf gas.

GREENWOOD COUNTY—Ohio Oil Co.'s Schwab 1, se sw se 9-24s-10e, set 5-in csg 2763 ft.

HARPER COUNTY—Carter Oil Co. et al's Seihart Estate 1, csw nw 4-34s-8w, dr 2150 ft.

HARVEY COUNTY—Harburney Oil Co.'s Schragg 1, nw nw se 24-22s-3w, fsg 3711 ft.

HASKELL COUNTY—Kuhn Bros. et al's Meredith 1, csw¼ 10-30s-33w, hole bridged, co.

KEARNEY COUNTY—J. L Murphy's Masonic Home 1, cnw¼ 1-26s-36w, mi rot tools.

LOGAN COUNTY—Rosespring Drlg. Co. et al's Wright 1, cse se 12-15s-35w, dr 3525 ft.

LYON COUNTY—Clyde Fred et al's Bruce 1, nw nw nw 13-18s-10e woc.

McPHERSON COUNTY—Hutchinson O&G Co. et al's Berg 1, sw sw se 15-20s-3w, dr 2372

ft. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, surf hole. Bradley Bros.' Barnholt 1, sw sw se 30-20s-5w, dr 35 ft. Fred C. Frank et al's Doles 1, se nw ne 12-19s-1w, spd.

MITCHELL COUNTY—Geo Seidhoff et al's Greiss 1, sw sw se 16-8s-10w, ur 10-in csg 2280 ft.

NESS COUNTY—Newton Dev. Co.'s Tenny 1, nw nw se 9-18s-25w, dr 3900 ft. Jones & Lane's Page Milling Co 1, se se nw 36-18s-26w, mim.

RENO COUNTY—Clyde Pulse et al's Payne 1, sw ne ne 4-22s-7w, pb 3244 ft, 500 ft oih. Foraker et al's Hiett 1, se sw ne 34-24s-4w, sd 3930 ft. Helmerich & Payne's Benson 1, ne ne ne 5-25s-6w, td 4195 ft, D&A. Atlantic's Page 1, se nw nw 19-23s-7w, rust 3678 ft. Olson Drlg. Co. et al's Herriman 1, nw nw nw 22-24s-8w, rot rig. Imo O&G Co. et al's Watkins 1, se se se 14-22s-7w, mim. Westgate-Greenland Oil Co.'s O'Sullivan 1, sw sw ne 24-23s-5w, dr 2580 ft.

RICE COUNTY—Continental et al's Michells 1, ne ne sw 12-18s-2w, set 7-in csg 3202 ft, rust. T. C. Johnson's Schubert 1, sw sw sw 9-20s-10w, dr 2195 ft. L. C. Douglas' Coyne 1, ne se se 24-21s-8w, sd 1505 ft. John Hanna et al's Fulton 1, nw nw ne 24-19s-6w, dr 1535 ft. Manning, Martin et al's Mathes 1, se sw ne 27-21s-8w, cor. Roy Ramsey et al's Malone 1, nw nw ne 1-20s-10w, dr 2595 ft. C. E. Skiles et al's Helmer 1, nw nw ne 7-19s-8w, mim. Skelly Oil Co. & Ewers Simpson Oil Co.'s Linville 1, sw nw ne 2-20s-10w, rur. Fred Phillips et al's Hubenett 1, sw ne sw 23-20s-6w, spd. Bradley Oil et al's Ginter Heirs 1, nw nw nw 13-20s-8w, lcn. W. E. Witt et al's Fair 1, ne se se 4-22s-8w, spd.

ROOKS COUNTY—Snowden & McSweeney's Hindman 1, ce½ nw 35-7s-17w, pb 3118 ft, set 5-in csg 3088 ft, sw 40 bbls oil, 24 hrs, A and testing. Graham et al's Fike 1, sw sw sw 9-9s-17w, td 3301 ft. Lester & Dean's Burtt 1, se se ne 29-10s-20w, fsg 3422 ft. Phillips Pet. Co.'s Manquist 1, sw sw nw 9-9s-17w, rur. Jones Bros. Drlg. Co.'s Wiss 1, nw nw nw 8-10s-8w, ur 15-in csg 870 ft. Basin Oil Co.'s Baxa 1, ne ne ne 23-9s-17w, dr 2160 ft. Buckner & Schoff's McConnell 1, ne ne ne 34-6s-18w, set 8-in csg 2731 ft, dr 2943 ft.

RUSH COUNTY—S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, dr 895 ft.

RUSSELL COUNTY—Empire's Vaughn 1, sw sw sw 17-14s-14w, testing. S. A. Murphy et al's Deines 1, se se sw 36-15s-15w, br. Goldstein & Vernon O&G Co.'s Steinert Estate 1, ne se sw 34-15s-15w, mim.

SEDGWICK COUNTY — Cameron et al's Smith 1, sw se se 13-27s-2e, fsg 2782 ft. Swearer et al's Thome 1, sw sw nw 19-28s-1w, dr 2650 ft. Roxanna Drlg. Co. et al's Woodman 1, sw nw sw 26-26s-1w, sd 611 ft. Empire O&R Co.'s Kimel 1, nw nw nw 4-29s-2w, brr. E. B. Shawver's Furman 1, sw ne se 24-29s-3w, mim.

STAFFORD COUNTY—Empire's Jordan 1, sw sw nw 15-25s-14w, cor. Empire's O'Connor 1, ne ne ne 17-24s-15w, pb 4108 ft, woc. Young et al's Murphy 1-A, se nw ne 32-21s-11w, fsg 1380 ft. Trigg & Vernon O&G Co.'s Andrea 1, se se se 4-23s-12w, dr 2470 ft. Rosespring Drlg. Co.'s Gray 1, nw nw nw 11-24s-13w, mi rig.

SUMNER COUNTY—Westfall et al's Rogers 1, sw ne sw 35-31s-1w, td 4400 ft. Graham et al's Dawson 1, nw nw nw 4-33s-2w, dr 3990 ft. E. B. Shawver et al's Bryan 1, cw½ w½ sw 36-30s-2w, dr 756 ft. The Texas Company's Harper 1, ne sw se 9-30s-3w, set 15-in csg 161 ft, woc. Hayes Drlg. Co.'s Richardson 1, sw sw sw 12-10n-8e, td 2019 ft, D&A.

TREGO COUNTY—Black Gold Oil Co.'s Allman 1, csw sw 34-14s-21w, dr 3798 ft.

WOODSON COUNTY—Reamer's Corn 1, ne ne ne 31-36s-15e, dr 1820 ft. C. L. Sheedy's Fuhlhage 1, cs½ nw se 27-25s-14e, td 1568 ft, D&A. Harper et al's Weidie 1, se se ne 10-24s-14e, dr 1962 ft.

SOUTH LOUISIANA

ACADIA PARISH—H. E. Dalton's Setting 1, Trilby prospect, 17-9s-1w, fsh 5426 ft. Humble's Nordyke 1, Ebenzer prospect, 23-10s-1e, dr shale 9446 ft.

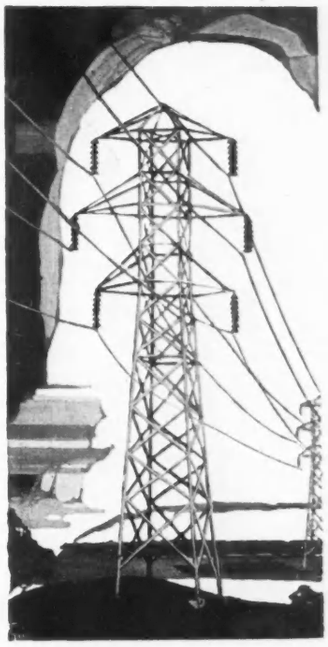
CALCASIEU PARISH—D & D Oil Co.'s Lutcher Moore 1, nw of Starks, 1-8s-13w, fsh 8398 ft.

CAMERON PARISH — Magnolia's Albert Dobbertine 1, Jahnson Bayou prospect, 9-15s-14w, dr clay 61 ft. Union Sulphur's Hebert 1, Big Lake area, 18-12s-8w, dr shale 6792 ft.

EVANGELINE PARISH—Bel Chaney Spring's Fee 1, 10-2s-1w, repairing dk, 2214 ft. Continental-Humble's Pardee 1, Reddell prospect, 18-4s-1w, dr shale 6109 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 414, Jefferson Island dome, 12s-5e, testing 6945 ft.

JEFFERSON DAVIS PARISH — Amerada-Stanolind's Calcasieu National Bank 1-B, China prospect, 28-7s-3w, sd waiting on orders, 9139 ft. Louisiana Crusaders Oil Co.'s I. Langley 1, Fen-



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ton area, 36-7s-5w, dk fd. Shell's Sturdevant 1, South Roanoke prospect, 25-10s-4w, cleaning hole 9749 ft. Stanolind's United Life Insurance 1, Hayes prospect, 16-11s-5w, dr shale 6945 ft.

LAFOURCHE PARISH—Fohs Oil Co.'s State Long Lake 1 Bourge area, 65-17s-19e, dr shale 3589 ft. William Helis' City of New Orleans 1, Marchland prospect, 19-23s-23e, dr sandy lime 6876 ft.

PLAQUEMINES PARISH—Gulf's State Bay Adams 'PP", in Bay Adams, 32-19s-28e, dr shale 4028 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 1, Lake Lery prospect, 28-14s-14e, dr shale 5518 ft. Southern Sulphur's State 2, Lake Borgne area, 38-14s-15e, no report.

ST. CHARLES PARISH—Amerada-Louisiana Land's State Bayou Des Allemands 1, Black Prince Island prospect, 13-15s-20e, mim.

ST. LANDRY PARISH—Shell's Boagni 1, ne of Cankton field, Bristol area, 48-8s-4e, dr sandy shale 4198 ft.

ST. MARTIN PARISH—Stanolind's Patin 1, Anse LaButte area, 36-9s-5e, testing 1800 ft. Texas Co.'s State 3, Lake Mongoulot prospect, 14-10s-9e, dr shale 3619 ft; same operator's St. Martin Land Co. 9, Henderson prospect, 21-8s-7e, dr shale 8689 ft.

ST. MARY PARISH—Texas Co.'s State Bateman Bay 1, Morgan City prospect, 21-16s-12e, dr water well at 1742 ft; same operator's State Horseshoe Bayou 1, Wax Lake area, 40-17s-9e, preparing to drill ahead below 10,975 ft.

TERREBONNE PARISH—Humble's Ellender 1, Houma Gas field, 23-19s-19e, dr shale 10,804 ft.

WEST FELICIANA PARISH—Cavalier Oil Co.'s Mackie 1, 55-3s-2w, dr shale 4451 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Lide, Greer et al's J. D. Smelley 1, sw ne 13-16n-5w, elev 239 ft, base massive anhydrite 5640 ft, 7-in csg 7368 ft, completed as gasser with dist, si for gauge, td 7393 ft; W. J. Smelley 1, se nw sw 18-16n-5w, mim. McDowell et al's Locke 1, 9-15n-10w, dr 2562 ft shale. DeSoto O&G Co.'s Wm. Ashley 1, sw se 15-16n-10w, mim. Seaboard Oil Corp.'s McGee 1, 3-16n-6w, 7-in csg 7537 ft, perf csg 6665-95 ft, est 67 mil ft gas daily, si for gauge, td 8017 ft.

BOSSIER PARISH—Ark. La. Gas Co.'s Wilson 1, sw se sw 8-17n-11w, dr 3555 ft. Haynes Drlg. Co.'s A. J. Murff 1, 35-17n-12w, coring 5224 ft. La. Pet. Corp.'s Edwards 1, 5-17n-11w, si for gauge, td 5184 ft. Producers O&G Co.'s Johnson 1, 5-17n-11w, lcn. Triangle Drlg. Co.'s Skannal I-1, 22-17n-12w, si for gauge 5170 ft; H. L. Skannal H-1, sw sw 23-17n-12w, testing with so, td 5166 ft. United's Skannal I-1, sw sw 25-17n-12w, dr 3150 ft; Henderson 1, 36-17n-12w, coring 5208 ft; Webb Unit 1, c 23-17n-12w, dr 2600 ft.

CADDO PARISH—Fallon Oil Co.'s Cupples 1, 24-16n-13w, 10⅝ in csg 2000 ft, massive anhydrite 4323 to 4508 ft, dr 4630 ft brown sands. Gulf's E. P. Hatcher 1, 11-17n-15w, elev 269 ft, 7-in csg 8307 ft, dr 9107 ft, gray sand. W. J. Hunter's N. B. Stoer -, sw ne 10-15n-15w, rur. R. W. Norton's Payne 1, se se 27-23n-16w, coring 8685 ft.

CLAIBORNE PARISH—Lisbon Oil Co.'s J. W. Burgess 1, se ne 3-20n-5w, elev 354 ft, base massive anhydrite 4212 ft, coring 5395 ft. Lyons & Neely's Patton 1, nw sw 36-21n-5w, ran electrical tester, cemt 6⅝ in csg, woc, td 5292 ft. J. R. Bevill et al's Edmonds 1, 16-20n-5w, lcn. Oden & Evans' Patton 1, se se 36-21n-5w, elev 355 ft, massive anhydrite 4030-4232 ft, completed flowing 34 bbls oil per hour through choke, td 5375 ft, basal Glen Rose. Red Iron Drlg. Co.'s H. F. Patton 1, sw ne 36-21n-5w, top saturation 5290 ft, topped sand with water 5328 ft, pb to set csg; H. F. Patton 2, 36-21n-5w, lcn; T. E. Patton 1, 36-21n-5w, lcn; McDonald 1, 36-21n-5w, lcn. Standard of La.'s R. D. Baker 1, nw nw 27-19n-7w, elev top red beds 3760 ft, dr 5180 ft anhydrite. United's Warren Brown 1, se ne 1-19n-6w, 5⅜ in csg 5719 ft, treated with acid, td 5984 ft; Rufus Simms 1, sw nw 32-20n-5w, si for gauge, td 5714 ft.

CATAHOULA PARISH — Balconies Oil Co.'s T. J. Chisum 1, 19-10n-8e, rur. Matheny & Schumacher's W. S. Peck 1, 40-10n-8e, mim.

DE SOTO PARISH—Sundby et al's Garland 1, se nw 7-14n-14w, elev 300 ft, top anhydrite stringer 4228 ft, ran electrical tester 5046 ft, dd. Stevens et al's Leslie Golden 1, se sw 2-11n-16w, lcn. Benedum & Trees Oil Co.'s Clifton 1, ne nw 33-13n-12w, 12¾ in csg 1010 ft, dr 3960 ft lime. Julian Igoe Synd.'s H. Smith 1, se se 31-14n-15w, lcn. Sanders et al's Allison 1, 17-14n-13w, mim. Chamberlin et al's Lanier 1, 29-11n-11w, dk. Grady Vaughn et al's Sample 1, ne se 24-11n-14w, owdd, 5955 ft. Pearl Oil Corp.'s Joyner 1, 28-11n-12w, 8¼ in csg 2885 ft, dry at 2899 ft, fsg 3000 ft.

FRANKLIN PARISH—Jensen et al's Bailey 2, c ne 36-12n-6e, mim.

RICHLAND PARISH—Gulf's R. R. Rhymes 15, se se 32-17n-6e, elev 87 ft, dr 9908 ft.

SABINE PARISH — Kirk-Greenway Drlg. Co.'s Whitney Corp. 1, 8-9n-13w, dr 3285 ft, hd gray lime.

WEBSTER PARISH—Ohio Oil Co.'s S. T. D. Coyle 1, se sw 23-21n-10w, dr 5660 ft; R. M. Coyle 2, se se 22-21n-10w, dr 4368 ft; S. P. D. Coyle & W. Cox 1, sw se 23-21n-10w, rur. A. H. Gray 1, Acct. 2, nw nw 26-21n-10w, dr 6120 ft; R. L. Holloway B-7, sw ne 23-21n-10w, rur. Hodges 2, nw sw 23-21n-10w, dr 6324 ft. Magnolia Pet. Co.'s D. G. Cox 2, se ne 22-21n-10w, woc 13⅜ csg 830 ft. United's Mixon 1, 22-21n-10w, 5-in csg 8211 ft, completed as gas-distillate producer, si for gauge, td 8231 ft. Wooley Pet. Co.'s Gray B-4, ne ne 27-21n-10w, Standard Oil Co. of La.'s Fudicker 1, 2-17n-9w, hole clean, arr perf csg, td 7202 ft; Webb 2, se¼ 2-17n-9w, lcn. L. R. Skidmore's Barnett 1, 29-17n-9w, sd 2662 ft, repr rig. Bass Drlg. Co. et al's Thos. Crichton Jr. 1, nw nw 21-20n-9w, rur.

WINN PARISH—C. W. Cline's Collingsworth Hrs. 1, se se 14-10n-4w, dk and mir.

MICHIGAN

ARENAC COUNTY—Mee & Wright's Yawkey 1, 28-18n-4e, dr 1790 ft.

GLADWIN COUNTY — McClanahan Oil Co.'s Avery 1, 10-17n-1e, Dundee 3566 ft, oil 3674-82 ft, td 3690 ft, testing. Bell & Marck's Wineman 1, 9-17n-1e, rig. Cryden Petroleum's Gary 1, 34-19n-1w, dr 110 ft. Gordon Oil Co.'s McClure 1, 25-19n-2w, dr 900 ft.

GRATIOT COUNTY—H. B. Cowdrey's De-Vuyst 1, 11-10n-2w, rig.

ISABELLA COUNTY—Gulf's Koch 1, 1-13n-4w, spd. Socony Vacuum's Murphy 1, 6-16n-3w, dr 1200 ft.

MONTCALM COUNTY—Charles Weller's Herzog 1, 14-12n-8w, dr 2600 ft.

OTSEGO COUNTY—Barton & Williams' Yuill 1, 9-32n-3w, lcn.

WASTHENAW COUNTY — Lee Brown's Kehrl 1, 12-1s-7e, dr 3900 ft. Ypsilanti Co.'s Vorhees 1, 32-2s-7e, dr 1730 ft.

WAYNE COUNTY—Darke Brothers' Truesdell 1, 25-2s-8e, dr 1900 ft. Wolverine Driller's Garduski 1, 19-2s-9e, dr 1400 ft. Pontchartrain Pet. Co.'s Boynton 1, 27-4s-8e, dr 2400 ft.

CLARE COUNTY—Wittmer Oil Co.'s Musgrove 1, 3-18n-5w, dr 3210 ft.

IONIA COUNTY—Boston O&G Co.'s Marshall 1, 16-6n-8w, dr 1300 ft.

MISSAUKEE COUNTY — Rex Oil Co.'s Meekoff 1, 30-21n-6w, mim.

MISSISSIPPI

AMITE COUNTY—Jno. P. Wemple, Tr.'s Southern Forest Land Co. 1, sw sw 29-4n-2e, dr 3435 ft.

JONES COUNTY—Snow-Black Pet. Co.'s Cranford 1, s½ nw 29-7n-12w, dr 800 ft.

LAMAR COUNTY—Sun Oil Co.'s Mrs. K. Talley 1, se sw 28-4n-15w, arr abu in salt at 2015 ft and skid 700 ft south for new test.

MONTANA

JUDITH BASIN COUNTY—F. E. Hunt's 3, nw se ne 30-14n-15e, dr 1333 ft.

PETROLEUM COUNTY—O. B. Canfield's Government 1, cel se ne 21-17n-24e, dr 770 ft. H. Clark Rowland et al's Kalispell 1, ne ne se 31-14n-25e, dr 759 ft.

YELLOWSTONE COUNTY — Broadview Dome Oil Co. 1, ne ne sw 18-3n-23e, lcn.

NEBRASKA

DAWES COUNTY—Stephens Petroleum Corporation's S. J. Palmer 1, nw sw 10-35n-50w, dr 1846 ft after resuming after sd through winter at 1838 ft.

SIOUX COUNTY—J. M. Huber Corp.'s Morgan 1, csw sw 32-35n-56w, co 25 ft off bottom with td at 2700 ft.

NEW MEXICO

LEA COUNTY — Anderson-Prichard Oil Corp.'s E. J. Wells-Conoco 1, c se se 5-25s-37e, mim. Jim W. Brown & Reynolds' Parcell-Conoco 1, c nw se 8-21s-36e, elev 3573 ft, top anhydrite 1616 ft, base salt 2820 ft, cem 5¼ in pipe 4200 ft, td 4378 ft, used 3000 gals acid, sd 4 hrs and flowed by heads, then swabbed 7 bbls fluid per hr before losing swab. Amon G. Carter et al's E. M. Elliott 2, c ne nw 22-22s-37e, elev 3375 ft, dr by bit, td 3622 ft. J. C. Clower et al's W. H. Turner 2, sw sw se 29-21s-37e, elev 3464 ft, dr 3000 ft. Continental Oil Co. et al's Danciger Permit 1, c nw ne 8-23s-36e, elev 3487 ft, cem 5¼-in cas 3657 ft, td 3730 ft; J. M. Skaggs 1, c ne se 24-20s-37e, elev 3555 ft, show free oil, td 3900 ft, formation failed to take 1000 gals acid at 3880 ft, dd to 3900 ft, testing. Culbertson, Erwin & Stovall's J. R. Stuart-Repollo 2, nw se se 10-25s-37e, elev 3108 ft, td 3421 ft, completed 370 bbls initial; Stuart-Repollo 3, ne se sw 10-25s-37e, elev 3111 ft, rig. A. R. Eppenauer et al's F. B. Stuart-Amerada 1, ne ne ne 22-25s-37e, elev 3082 ft, top anhydrite 1000 ft, top salt 1200 ft, oil pay 3315-25 ft, flowed natural,

will deepen and shoot. J. E. Farrell & Co.'s E. W. Walden-Amerada 1-A, c sw nw 15-22s-37e, elev 3407 ft, td 3551 ft, rust;Walden-Amerada 1-C, c sw sw 15-22s-37e, elev 3385 ft, td 3686 ft, shot 280 qts 3540-3680 ft, flowed 35 bbls oil and 6,000,000 ft gas, testing. Gulf Oil Corp.'s C. L. Hardy 1, c se sw 20-21s-37e, elev 3492 ft, dr 1175 ft; O. I. Boyd 1, c sw sw 23-22s-37e, lcn; Carson 1, c ne sw 28-21-37, dr 650 ft; F. B. Davis 1, c ne ne 8-23s-37e, lcn; Eunice A. King 2, c nw nw 28-21s-37e, lcn. H. T. Mattern 1-B, ne ne se 30-21s-37e, elev 3483 ft, dr 2720 ft; Geo. W. Shahan 1, c nw ne 33-25s-37e, lcn; C. D. Woolworth 1, c ne se 30-24s-37e, lcn. Herschbach Drlg. Co. et al's Seth Alston-Conoco 1, c sw ne 31-17s-37e, elev 3775 ft, dr 1000 ft. H. W. Leonard et al's B. T. Lanehart 3, c ne nw 21-25s-37e, elev 3081 ft, sp. Magnolia's Will Cary 2, c ne sw 21-22s-37e, elev 3359 ft, top lime 2765 ft, td 3620 ft, shot 220 qts 3508-62 ft, flowed 100 bbls 24 hrs, testing; State 1-G, nw nw ne 24-17s-34e, elev 4019 ft, top anhydrite 1700 ft, top lime 4378 ft, pb fr sul w 4896-4905 ft to 4794 ft, shot 580 qts 4618-4772 ft, testing with 2300 ft oil in hole. Maljamar O&G Corp.'s Baish 8, c sw ne 21-17s-32e, elev 4022 ft, shot 20 qts 2320-38 ft, td 2352 ft, swabs 50 bbls daily. Ohio Oil Co.'s J. W. Grizzell 1, c sw se 5-22s-37e, elev 3431 ft, dr 310 ft. N. G. Penrose & Rowan-Nichols Oil Co.'s Cary-Humble 3, c se nw 22-22s-37e, elev 3364 ft, dr 2550 ft.J. L. Perry et al's E. M. Elliott 1, se se se 19-21s-37e, elev 3496 ft, rig. Plains Prod. Co. et al's J. A. E. Knight, Humble 4, c sw sw 22-24s-37e, elev 3225 ft, testing, td 3535 ft. Repollo Oil Co.'s Fowler Hair 1, nw nw nw 9-24s-37e, elev 3267 ft, dr 2945 ft; Robt. Jamison 2, sw sw nw 22-24s-37e, elev 3236 ft, shot 100 qts 3424-75 ft, td 3485 ft, complete 232 bbls initial; J. T. Lanehart 1, rig; R. L. Mosley 1, nw sw se 34-24s-37e, dr 3287 ft; Frances Stuart 2-B, ne ne se 10-25s-37e, cellar. Samedan Oil Corp.'s S. B. Hughes 3, c ne se 4-23s-37e, elev 3311 ft, dr 2290 ft. Shell Pet. Corp.'s J. F. Black 2, c sw se 21-24s-37e, elev 3219 ft, dr 3240 ft. Skelly Oil Co.'s J. V. Baker 4, c sw nw 27-22s-37e, elev 3341 ft, cem cas, td 3390 ft; G. W. Sims 2, c ne ne 9-33s-37e, machined; Ellen Sims 2, c sw ne 3-23s-37e, elev 3301 ft, pay 3520-3610 ft, complete 160 bbls oil 8 hrs and 2,000,000 ft gas; R. R. Sims 1-C, c se sw 3-23s-37e, elev 3297 ft, fsh 3388 ft; R. R. Sims 3, c sw se 4-23s-37e, dk; R. R. Sims 4, c se sw 4-23s-37e, lcn; E. A. Sticher 1, c ne sw 4-22s-37e, lcn. Stanolind O&G Co.'s C. Myers 1, c ne sw 22-24s-37e, elev 3256 ft, td 3552 ft, testing; C. Myers 2, sw sw sw 4-24s-37e, mim; C. Myers 3, c ne se 4-24s-37e, lcn; Eva Owens 1, c sw nw 3-22s-37e, dk. Mac Stauffer et al's L. E. Grizzell-I. T. I. O. 1, c nw ne 8-22s-37e, elev 3425 ft, dr 3085 ft. W. H. Street et al's Wood-Humble 1, near c se ne 22-22s-37e, elev 3355 ft, shot 260 qts nitro 3540-3654 ft, td 3664 ft, co and flows 90 bbls daily. Sun Oil Co.'s I. R. Stuart 2, c sw ne 15-25s-37e, dr 2677 ft. The Texas Co.'s J. P. Alexander 1, c lot 14, 5-21s-37e, elev 3490 ft, hit gas 3705 ft, fsh tools; Jas. F. Black 2, c ne sw 21-24s-37e, elev 3231 ft, dr 2930 ft; C. P. Falby 1, c ne nw 8-22s-37e, elev 3435 ft, cem 9⅝ in cas 1192 ft, td 1213 ft. Tide Water Associated Oil Co.'s R. M. Marshall 1, c sw ne 13-21s-36e, elev 3555 ft, dr 1900 ft; Ann Walden 2, c sw ne 21-22s-37e, elev 3360 ft, hfo 3565-70 ft, testing.

ROOSEVELT COUNTY—Clovis Dev. Co.'s S. Smith 1, c se ne 17-2s-30e, elev 4597 ft, dr 2650 ft. Franklin Oil Corp. et al's Rual Giphant 1, nw nw nw 28-3n-30e, elev 4458 ft, dry and abd in lime and shale 5195 ft.

OKLAHOMA

ATOKA COUNTY—A. J. Sanders' Redden 3, se sw sw 19-1n-5e, mirt, 1275 ft. Phelps & Coats et al's Fidelity Life Ins. Co. 1, se sw nw 23-1s-12e, td 750 ft, D&A. Malarnee et al's Ranch 2-A, cse se 35-2s-13e, td 4605 ft, D&A.

BECKHAM COUNTY — Carter Oil Co.'s Garrett 1, ne ne ne 11-17n-25w, dr 1655 ft. Mid-American Oil Co.'s Biscoe 1-A, sw sw sw 28-8n-22w, dr 905 ft.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, bldg der.

CARTER COUNTY—Lyle-Wham Dev. Co.'s Jackson 1, cne sw sw 26-5s-1e, sdo. Helmerich & Payne's Wolverton 1, se ne nw 21-3s-1w, lcn.

CHOCTAW COUNTY—Cooper & Branstetter's Bell 1, cnw ne 29-6s-17e, sd.

CLEVELAND COUNTY — Hollenback's Stinson 1, nw nw ne 17-9n-2w, td 300 ft, rmg to run csg.

COAL COUNTY—Ruwaldt & Couch' McMillan 1, sw sw sw 10-1s-8e, woc.

COMANCHE COUNTY — Frank Scott's Kuntz 1-A, cse ne se 21-4n-11w, sd 2210 ft. C. V. Morris' Young 1, se ne se 23-4n-10w, sd 882 ft. L. D. Wise et al's Cones 1, se se sw 11-1n-10w, td 2156 ft, D&A.

COTTON COUNTY—E. B. Hane's Duper 1, nw nw nw 21-2n-13w, dr 250 ft.

CREEK COUNTY—J. E. Crosbie & Sinclair Prairie's Bailey 1, ne nw nw 28-16n-8e, sd 3055 ft. W. J. Sherry's Childers 1, sw sw nw 2-15n-7e, dr 1825 ft. M. W. Mosier et al's Holcomb 1, se sw ne 19-18n-8e, fsg 2935 ft.

GARFIELD COUNTY — Arab Oil Co.'s Harkendorf 1, ne ne ne 34-20n-3w, dr 3245 ft. Ohio Oil Co.'s State 1, sw sw sw 13-23n-2w, lcn.

GRADY COUNTY—R. E. Johnson et al's Thomas 1, sw se sw 18-5n-7e, lcn abd. Western White Lily Oil Co.'s Stover 1, cse sw nw 33-3n-7w, sd 1110 ft.

HASKELL COUNTY—Continental Oil Co.'s Anderson 1, sw se ne 33-8n-20e, lcn.

HUGHES COUNTY—Carson Oil Co.'s Lyter 1, ne nw sw 31-8n-12e, dr 4904 ft. Mid West Oil Co.'s Turner-Lucas 1, cse nw 13-9n-9e, sd 2942 ft. Wrightsman's Diamond 1-A, se ne ne se 33-9n-9e, woc 3390 ft.

JEFFERSON COUNTY—Buffalo Oil Co.'s Crown-Over 1, cse se nw 21-6s-6w, dr 1850 ft. Massad & Swansberger's Barrett 1, ne se se 14-6s-6w, sd 1538 ft. Olson, Heenan & Coe Oil Co.'s Rose 1, csw sw 1-5s-5w, wo tools. Cap Fields et al's Trout 1, ne ne sw 5-8s-7w, dr 1410 ft. Gulf Oil Corp.'s Woodworth 1, cnw nw ne 20-3s-4w, lcn.

JOHNSTON COUNTY—Patton et al's McCrummens 1, sw sw ne 16-1s-6e, sd 1155 ft.

KAY COUNTY—G. A. Brown et al's Harris 1-A, sw sw ne 14-25n-1e, spd 65 ft. Ritz O&G Co.'s State 1, nw ne sw 16-29n-2w, td 4449 ft, D&A.

KIOWA COUNTY—Argus Pet. Co.'s Osbourne 1, nw nw ne 9-7n-16w, fsg 1225 ft.

LATIMER COUNTY—Clark Drlg. Co. et al's Wilson 1, cse se 15-5n-18e, td 3650 ft; mlg on core.

LINCOLN COUNTY — Anderson-Prichard's Colon 1, nw se sw 28-17n-4e, gauge 6,800,000 cf gas, dr 4385 ft. Mid-Continent Pet. Corp.'s Logan 1-A, ne ne se 31-11n-5e, dr 2457 ft.

LOGAN COUNTY — Harry Blackstock's Prince 1, se ne sw 11-17n-3w, dr 6292 ft. Helmerich & Payne et al's Ruck 1, cne se 9-19n-2w, dr 2946 ft. Anthony & Marshall's Fruin-Eckman 1, se se sw 4-16n-1e, shot at 4959 ft, co 4961 ft.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, sd for tools; will dr out fish. Sadson-Wells-Pierson's Key 1, cse se nw 6-8s-1w, dr 2406 ft.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, td 803 ft, sd.

MURRAY COUNTY—Russell's Fee 1, se

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Nineteen years ago JENSEN Pumping Equipment was the best available. But in the meantime we have devoted every working day of our lives to its development and perfection. And we have had the whole-hearted cooperation of successful producers everywhere.

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nw se 9-2s-3e, ur 6⅝ in csg, 1100 ft. Power Oil Co. et al's Lancaster Trust Co. 1, csw ne 10-1s-2e, sd, woc.

NOBLE COUNTY—Lincoln Oil Co. et al's Neil 1-A, ne ne ne 15-23n-2w, set 13⅜ in csg 131 ft, dr 800 ft.

OSAGE COUNTY—Norbla Oil Co.'s No. 1, ne ne se 13-23n-6e, fsg 760 ft.

PAWNEE COUNTY — Forest Dev. Co.'s Markham 1, sw ne se 10-21n-5e, dr 2440 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft. Bill Riddles' Van Zandt 1, nw nw se 16-18n-3e, C&P.

PITTSBURG COUNTY—Okla. Dist. Co.'s Beeler 1, ne ne sw 7-7n-14e, sd 5165 ft.

PONTOTOC COUNTY — E. H. Moore's Muse 1, sw ne se 33-2n-7e, dr 5025 ft.

POTTAWATOMIE COUNTY — Champlin Ref. Co.'s Buckler 1, se ne ne 7-6n-4e, dr 3110 ft. B. H. Rowlett et al's Burson 1, sw sw ne 21-9n-4e, lcn abd.

PUSHMATAHA COUNTY—Erle Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, new rot table.

SEMINOLE COUNTY—Edward's Frederick 1, ne se nw 31-2n-8w, set 6⅝ in csg 2716 ft.

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HOUSTON, TEXAS

Carter's Harley 1, cne ne 24-2s-4w, dr 3675 ft. Wm. Angle et al's Posey 1, cnw nw 8-1n-8w, circ. Helmerich & Payne's Graham 1, csw sw ne 12-1n-5w, testing 5014 ft. Ed Parson's Olson 1, csw sw 21-2n-8w, td 7002 ft, to test. B. F. Lundy's Calmes 1, cnw sw se 35-1n-4w, dr 1750 ft. Penn State Oil Co.'s Cole 1, cw½ sw nw 21-2n-8w, dr 80 ft.

TEXAS COUNTY—Cabot Carbon Co.'s Castro 1, cne 19-3n-17ecm, set 7-in csg 2570 ft. Missouri Valley Gas Corp.'s Fitzgerald 1. C sec 17-6n-14ecm, rig.

TILLMAN COUNTY—I. T. I. O. Co.'s Hatler 1, csw ne 32-2s-17w, td 5169 ft, pb 4525 ft, IP 78 bbls oil and 5 bbls wtr. Skinners' Oliver 1, se se nw 22-1s-15w, sdo 1378 ft.

WASHITA COUNTY — John Koberg's Harms 1, cnw nw ne 6-10n-16w, der.

EAST TEXAS

ANDERSON COUNTY—Tom F. Hunter, Jack W. Frazier & American Liberty Oil Co.'s G. E. Gage 1 (160-ac), C. B. Gilbert sur, 2 mi se Blackfoot, elev 234 ft, Pecan chalk 2850-3004 ft, Austin chalk 3980-4376 ft, top Woodbine series 4782 ft, top Red Beds 4989 ft, top Georgetown lime 5384 ft, top Paluxy series 6758 ft, dr shale 7064 ft. Roeser-Pendleton, Inc.'s V. W. Bowyer 3 (200-ac), E. Ritter sur, Cayuga field Trinity test, elev 317 ft, rur. Tide Water Associated-Seaboard Oil Corp.'s Monnig Bros. 7 (3806.82-ac), Simon Sanchez sur. No. 1-11, Long Lake field Trinity test, elev 233 ft, Pecan chalk 3565-3766 ft, Austin chalk 4687-4957 ft, top Woodbine sand 5273 ft, top Georgetown lime 5904 ft, top Anhydrite 8343 ft, dr 8509 ft.

BOWIE COUNTY—Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Nacatoch 740 ft, top Annona chalk 1308 ft, top Blossom sand 2063 ft, sd 2340 ft. Sutton & Hawkins' D. L. McDuffie 1 (336-ac), John Ball sur, 3 mi se New Boston, elev 333 ft, top Annona chalk 1472 ft, fsh in hard lime 5320 ft. Mrs. S. O. Thompson & Sunray Oil Co.'s R. B. Rosemont 1, Jefferson Milam sur, sp.

CHEROKEE COUNTY — Joe Sanders et al's J. W. Ware 1 (106-ac), J. L. Trimble sur, kd 2708 ft, skid 20 ft east; Ware 1-A, Pecan chalk 2706-3100 ft, dr 3695 ft. J. G. Mayo et al's Dr. J. T. Greenwood 1 21½-ac), C. Parks sur 295, 4½ mi w Lone Star, rur.

DALLAS COUNTY—Mauldin Oil Co.'s W. E. Howell 1 (107.7-ac), S. Layton sur, sp and sd.

DELTA COUNTY—F. J. Estes et al's W. S. McGee 1 (207-ac), J. G. Oliver sur, 2 mi sw Klondike, elev 449 ft, top Georgetown lime 3305 ft, sd 4001 ft.

FALLS COUNTY—J. Edward Mills et al's Sam Grucholski 1 (40-ac), Dennis Herold League, 5 mi sw Kosse, elev 521 ft, top Edwards lime 3867 ft, top upper Glen Rose 4074 ft, dr anhydrite 5108 ft.

FREESTONE COUNTY—C. F. Lytle et al's Roy Simmons 1, (28.83-ac), R. B. Longbotham sur, ½ mi s Wortham, in depleted section field, rur. Stroud & Buzzard's P. Nullins 1, R. D. Sloan sur, 6 mi ne Fairfield, sp.

GRAYSON COUNTY — Olson Drlg. Co., Jas. H. Gardner, Broswood Oil Co. et al's D. R. Utiger 1 (160-ac), P. P. Cady sur, 5 mi nw Denison, Preston Anticline, elev 722 ft, base Trinity 930 ft, top Woodford chert 955 ft, top Viola cherty-lime 1570 ft, top Stringtown shale 1854 ft, top lime 2415-2575 ft, Blakely sand and dolomite 3783-3941 ft, dr 5300 ft.

HENDERSON COUNTY — Humble, Tide Water Associated & Seaboard Oil Corp.'s McElreath-Suggett 1-C (149-ac), W. P. Wyche sur, 1½ mi nw Opelika, Trinity test, elev 392 ft, Pecan chalk 2580-2730 ft, top Austin chalk 3710-4110 ft, top Woodbine series 4137 ft, top sand (water) 4204 ft, top Georgetown lime 4990 ft, dr 5367 ft. E. B. LaRue et al's Amicable Life Ins. Co. 1 (1851-ac), Phillip Jackson sur, 2½ mi w LaRue, Trinity test on LaRue salt dome, lcn.

HOPKINS COUNTY—Empire O & R Co.'s J. E. Worsham 4 (149.36-ac), A. O. Wetmore sur, mim. Robt. D. Goodrich et al's R. A. Logan 1 (87½-ac), A O. Wetmore sur, 7000 ft sw of prod, mim.

HOUSTON COUNTY — American Liberty Oil Co. et al's J. A. Bean 1 (61.02-ac), Green Evans sur, nw Grapeland, elev 489 ft, top broken Pecan chalk 4623 ft, base chalk 4899 ft, Austin chalk 5614-5938 ft, top Woodbine series 6018 ft, showed gas before logging water sand at 6089 ft, dr 6210 ft Hunt Oil Co.-Shell Pet. Corp.'s J. E. Elliott 1 (200-ac), J. M. Procella sur, 6 mi ne Grapeland, top Pecan chalk 4590 ft, dr 4615 ft. E. R. Mount, Branch et al's Dr. P. S. Griffiths 1 (136-ac), Frank Johnson sur, 3 mi sw Crockett, sd 1740 ft. Ridgeway and Jackson's H. F. Moore 2 (53-ac), H. Mester sur, 2 mi se Crockett, elev 337 ft, dk.

HUNT COUNTY—Penn Oil Corp., Elmer S. & Fox Wood's A. B. Parrish 1 (200-ac), Nancy Danley sur, 7 mi ne Lone Oak, dk. The Texola Land Corp.'s J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, sp and sd.

KAUFMAN COUNTY—J. M. Scott and J. B. Woodside's Wood & Temple Nash 1 (80-ac), Juan Cortez sur, 1 mi e Scurry, mim.

LEON COUNTY—H. M. Ogg et al's O. Wiley 1, E. Devinney sur, 1 mi w Buffalo, dk.

LIMESTONE COUNTY—Pure Oil Co.'s W. B. Kendrick 16 (96-ac), Pedro Varella sur, 3 mi w Mexia, Mexia field Trinity test, fighting crevice, td 268 ft. A. W. Phillips, J. Johnson et al's E. M. Speight 1 (136½-ac), M. Herrin & Pedro Varella sur, 4 mi ne Groesbeck, elev 415 ft, Pecan chalk 2450-2520 ft, Austin chalk 2720-3003 ft, sd 3695 ft.

RED RIVER COUNTY — Carpenter Oil Corp.'s R. E. Anderson 1 (100-ac), S. W. Sims sur, 3 mi n Clarksville, elev 459 ft, top Red Beds 1250 ft, top Paluxy series 1845 ft, top anhydrite 2590 ft, sd 3019 ft; J. M. Roberts 1 (100-ac), John Ware sur, 10 mi ne Clarksville, electrical survey showed oil saturation in Paluxy 1114-35 ft, td 1180 ft, sd to perforate.

ROBERTSON COUNTY—J. Edward Mills et al's Tony Congelosi 1-A (75-ac), Geo. A. Nixon sur, 3 mi sw Hearne, skid rig and sd.

UPSHUR COUNTY — Frank Linbart & Kightlinger's F. W. Fair 1 (100-ac), H. W. Augustine sur, 4 mi se Big Sandy, cem surface pipe.

VAN ZANDT COUNTY—Humble's L. K. Riggs 1 (74-ac), Wm. Daniel sur, ne edge Van field, rur. Stroud & E. N. Lowe's P. L. McNeill 1 (104-ac), J. W. Guest sur, 4 mi n Ben Wheeler, elev 510 ft, sp and sd.

WOOD COUNTY—B. F. Phillips et al's Mrs L. E. Pritchard 1 (50-ac), T. Craddock sur, 4 mi s Winnsboro, sp.

BORDER COUNTIES

CASS COUNTY—Cross Roads Oil Corp.'s S. A. Orr 1, G. A. Morris sur, elev 399 ft, sd 200 ft. G. H. Clamblee's Collett Hrs. 1, J. S. Smith sur, lcn. McAlester Fuel Co.'s J. J. Dooley 1, Calloway Davis sur, lcn.

HARRISON COUNTY—H. H. Alvord's M. A. Flannagan 1, L. Womack sur, top chalk 1308 ft, setting 7-in csg, td 2449 ft. C. M. Bagley's J. N. Trosper 2, C. Davenport sur, wosr, td 2453 ft. Eastern Shrevetex Oil Corp.'s Mable George 1, J. S. Powell sur, sd 825 ft, shale. Geyer Oil Co.'s Alex Moore 1, C. W. Field sur, wosr 2452 ft; Vincent B-2, dr 2140 ft. Kennedy & Batchelor's Lane & Greer 1, J. M. Baker sur, top Nacatosh 928 ft, base Annona chalk 1690 ft, top Tokio 2354 ft, 5-in csg 2336 ft, used acid, testing showing considerable oil, td 2364 ft. Patsan Oil Co.'s Zion Douglas 2, S. Fields sur, top Tokio 2455 ft, 5-in csg 2454 ft, acidized, swabbing 75 bbls oil daily, td 2512 ft.

MARION COUNTY—Ark-La Gas Co.'s W. S. Ford 1, Chas. Grayson sur, elev 332 ft, top massive anhydrite 5588 ft, top Hill 5971 ft, top Gloyd 6085 ft, set 7-in csg on bottom 6351 ft, perf csg at Gloyd, swabbed, acidized, reperf, testing, td 6351 ft. Laura McIntosh 1, Wm. Edmonson sur, elev 272 ft, top Nacatosh 1870 ft, top Hill 5836 ft, fsg 5901 ft. Dunn & Fisher's Susie A. Chatten 1, A. de Los Santos Coy sur, elev 247 ft, top massive anhydrite 5413 ft, top Hill 5800 ft, top Gloyd 5914 ft, arr set pipe and test 19 ft saturated formation in basal Hill, td 5955 ft. Holcomb, Thomasson et al's Lizzie Henderson 1, R. Bennington sur, elev 221 ft, installing side chokes, td 5996 ft, old td 6405 ft. Mrs. J. E. Hale et al's Lizzie Henderson 1, R. Bennington sur, lcn. A. T. Freet et al's G. C. Bonham 1, Robt. Potter sur, dk. Seymore Oil Co.'s Lucas 1, A. Castleberry sur, dk.

PANOLA COUNTY—Danciger O&R Co.'s Tatum 1, Alfred Bissell sur, rur. R. B. Dearing et al's Wooten Est. 1, Winny Mann sur, dk. Magnolia Pet. Co.'s E. A. Hull 2, Thos. Applewhite sur, spd. Motex Oil Co.'s J. M. Furrh 1, Thos. M. Alstone sur, elev 377 ft, massive anhydrite 4660-4906 ft, coring 5680 ft. Logansport P. L. Co.'s Rushing 1, Mannan Smith sur, sd 2742 ft shale.

SHELBY COUNTY—H. A. Stebbinger et al's Pickering Lbr. Co. 2, A. Hanson sur, elev 205 ft, massive anhydrite 4628-4825 ft, claim sg and dist, ran 7-in csg, arr dr plug, td 5041 ft, oolitic lime.

SOUTH TEXAS

SAN ANTONIO DISTRICT

ATASCOSA COUNTY—Frontier Oil Co.'s Oppenheimer 1, Sharp sur No. 318, pb from 2770 ft to 2667 ft to acidize. Helvetia Oil Co.'s Susie Pratt 2, F. de la Garza sur, Anchorage prospect, td 3460 ft, sd in sdtr hole 2424 ft, sand 2398-2424 ft. R. J. Roberts' J. M. Elder 1, D. Brister sur, dr 2835 ft.

BANDERA COUNTY—A. T. Crane et al's R. B. Watson 1, Curver sur No. 71, still fsh 2035 ft.

BASTROP COUNTY—J. L. Collins Co.'s W. T. Turner 1, A. Litton sur, sp.

BEXAR COUNTY — American Gas Co.'s Oliver 1, Rodriguez sur, Gas Ridge, sd 3425 ft. W. D. Bacon et al's Seffel 1, Arocha sur, dr 1410 ft. J. H. Devine et al's Miholski 1-A, Bus-

tillo sur No. 29, dr 492 ft. P. N. McCullough's Bitter 1, J. M. Baerrera sur, sd 550 ft. J. O. Williams' Hoch Est. 1, J. M. Baerrera sur prep re-dr 485 ft. Woodward & Hardie's Devilbiss 1, Devilbiss sur, ru spudder to dd fr 2284 ft; Herman Sons 1, Henry Pace sur No. 37, prep dr ahead 1720 ft.

BLANCO COUNTY—E. L. Nixon's H. Hohenberger 2, A. Jonas sur No. 723, dr 815 ft, lime.

BURLESON COUNTY—Red Bank Oil Co.'s Gramm 2, E. Santef sur, dr 1835 ft.

CALDWELL COUNTY—J. R. Brinkley et al's (was G. A. McDonald) Mrs. A. C. Bridges 1, S. Seal sur, fsh 2246 ft. W. T. Trammel 1, H. Hunter sur, bailing considerable oil 2314 ft, top Buda 2302 ft. H. F. Sackett & M. J. Keoughan's J. E. Cardwell 1, P. B. Bell sur, ru.

DIMMITT COUNTY—Porter & Connor's Tideman 1, sec 10, I&GN Ry. sur, blk 10, 7000 ft test to start April 15. Wilcox O&G Co.'s Light Ranch 1, sec 67, I&GN Ry. sur, ru.

EDWARDS COUNTY—Dan Auld's Rigsby 1, sec 16, GC&SF sur, sp.

FAYETTE COUNTY—McNeil Pet. Co.'s Dybala 1, A. Thompson League, dr 3060 ft.

FRIO COUNTY — Amerada Pet. Corp.'s Halff & Oppenheimer 8, S. A. Ditch sur No. 1104, Pearsall, dr 7380 ft, lime, top Glenrose 6992 ft; D. D. Harrigan 1, S. Flores sur No. 306, dr 4052 ft.

GONZALES COUNTY—Canoe Creek Oil Co.'s W. L. Blots 1, W. A. Matthews sur, dk. Tull et al's J. F. Bozka 1, McClure sur, dr 2617 ft.

GUADALUPE COUNTY—R. B. Byrd's L. Schueneman 1, G. Dewitt sur No. 11, lcn. J. E. Clark's T. C. Anderson 1, Robt. Hall sur, sp. Diamond Half Oil Co.'s E. Bibbs et al 1, J. W. Robinson sur, dr 3525 ft, top Edwards lime 2760 ft. Nick Marosis' Maierhofer 1, L. A. Peters sur, td 2175 ft, pb 780 ft, set 6 in cas 750 ft, wo ds to dr plugs. Kennedy & Crowley's (Walter Myrrick et al), Jahns 1, J. K. Davis sur, td 2507 ft, in chalk, broken materials with streaks like serp., show oil last 28 ft, wo cas. Perot Oil Co.'s J. Priestly 1, Williams sur, abnd 2093 ft. Riddle Oil Co.'s Herff 1, E. Gotari sur, td 2160 ft, top chalk 1892 ft, base 1988 ft, set csg, wocs. S. Robertson et al's Blumberg 1, M. Baker sur, dr 855 ft, sh. W. Scott Townsend's Tom Terrill 1, J. Cantu sur, sd 300 ft. W. J. Walton et al's P. K. Delany 1, J. Cantu sur, dr 1815 ft; Martin Hoffman 1, Dewitt sur No. 11, td 2665 ft, pb to 2535 ft, wait on storage.

KERR COUNTY—S. W. Forrester's J. W. Bailey 1, Starky sur No. 408, sd 856 ft.

LEE COUNTY—J. E. Pederson's C. A. Turner 1, D. Hudson sur, td 6560 ft, sdtr and dr 6061 ft, swabbed little oil, 6 3/16 in csg 6010 ft.

MEDINA COUNTY — Gates-Hull-Mead's Kreisle 1, sec 908, sd 60 ft. R. C. Hill's Odem 2, Castro sur, abd 360 ft. Lynd & Fondren's Lind 1, A. Smeller sur, dr 1300 ft. C. J. Webster O&G Co.'s Wm. H. Weimers 1, J. Haley sur No. 32, dk. Williams & Gulley's Noonan Ranch 1, Brunkhoff sur No. 318, hole caving 350 ft.

MILAM COUNTY—W. R. Ritchey's C. McDermett 1, J. R. Cockrill sur, sd 2520 ft.

REAL COUNTY—Sun Oil Co.'s Dietert & Oppenheimer 1, sec 7, GWT&P Ry. sur, dr 5584 ft.

ZAVALLA COUNTY—H. F. Wilcox's T. J. Gillam 1, sec 11, GWT&T Ry sur, dr 2435 ft.

CORPUS CHRISTI DISTRICT

ARANSAS COUNTY—Barnsdall Oil Co.'s Kate Edwards 1-A, W. Lewis sur, Lamar prospect, dr 5975 ft. Collins & Wilkerson's McCampbell 1, blk 10, McCampbell sur, td 6551 ft, sand 6546-50 ft, set csg, wocs.

BEE COUNTY—Dirks Bros.' Tom Strauch 1, sec 19, Chittem Ranch, sand 4267-75 ft, comp 230 bpd, ⅛ in ch, flowing. Lonnie Glasscock's J. B. Albinger 1, John Ryan sur, Beeville prospect, ru to dd fr 800 ft. H. H. Weinert et al's James Smith 1, J. R. Johnson sur, dr 2930 ft.

BROOKS COUNTY—Standard Oil Co. of Texas' Mestina (Lease 2) 1, tr 11, R. G. Salinas sur, 6 mi n Alta Mesa pool, sp. Texas Gulf Prod. Co.'s T. S. Proctor 1, blk 2, sec 20, Los Olmos & Blanco sur, dr 5950 ft.

CALHOUN COUNTY — Hiawatha O&G Co.'s John Roemer Est. 1, J. J. Ogsberry sur, mim to dd fr 8378 ft.

CAMERON COUNTY—Stapper Pet. Corp.'s Port Isabel 1, blk 17, Port Isabel sub, Espiritu Santo gr, dr 5135 ft.

GOLIAD COUNTY—Dirks Bros.' Dr. Allen 1, Obid Marshall sur, se Slick field, sp.

HIDALGO COUNTY—Gulf States Oil Co.'s J. Engelman 3, lot 3, blk 70, Mestina gr, set 8100 ft 5 in csg, perf 8016-34 ft, test sw, pb and perf in 7800 ft sand. Sterling O&R Co.'s J. C. Engelman 1, lot 5, blk 95, Mestinas gr, dr 7425 ft. Dayle L. Smith Oil Co.'s Fairbanks and Young 1, blk 44, por 46, coring 2345 ft.

JACKSON COUNTY—Cockburn Oil & T. Hargrove's Santa Theresa Farms 1, tr 34, sec 23, I&GN sur, mim. Shell Pet. Co.'s T. N. Mauritz 1-B, O. S. York sur, ab 306, coring 5655 ft, sh, and 5645-52 ft odor. The Texas Co.'s T. N. Mauritz 1, Morris & Cummings sur, sec 4, ab 305, dr 4695 ft.

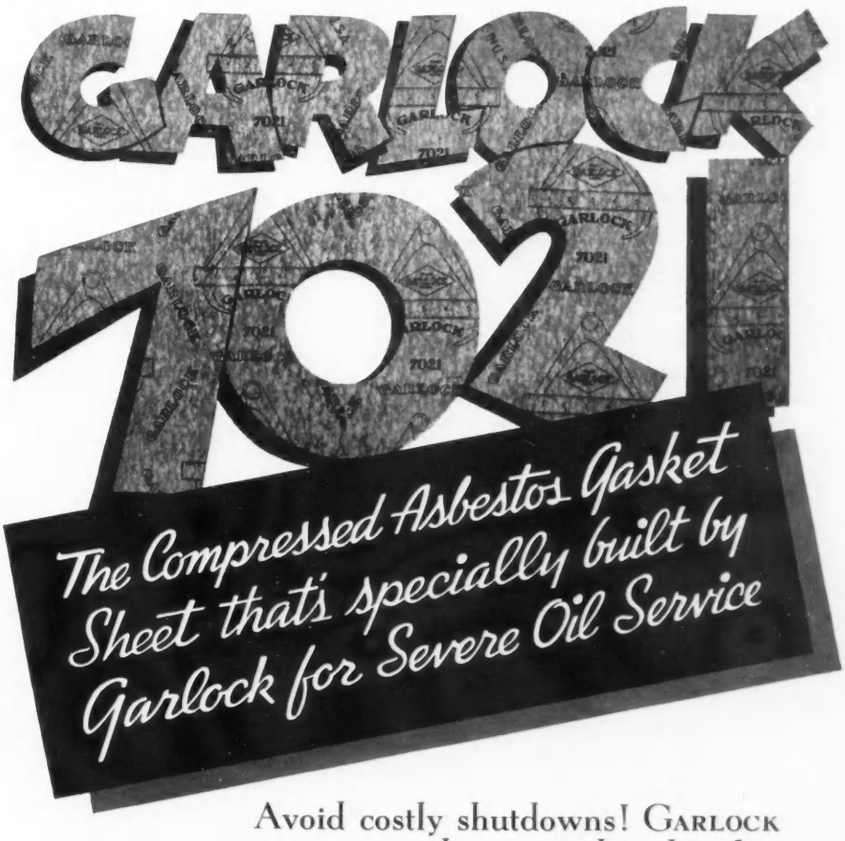
JIM WELLS COUNTY—Arkansas Fuel Oil Co.'s G. H. Bierstadt 1, blk 32, J. Reynolds sur, td 5017 ft, sand 4798-4827 ft, pb 4650 ft sth and re-dr to 5000 ft, abnd. Baltic Drlg. Co.'s B. W. Owens 1-A, Poitevent sur, coring 5636 ft. Tom Graham's J. Luby Est. 2, sh 4, Los Presnos de Abajo gr, td 5792 ft, perf 5423-33 ft, jetting some oil. Henshaw Bros.' W. H. McGriffin, sec 230, mim. Tsesmelis & Reese's Martha Earhart 1, J. Suggs sur, ab 447, coring 1525 ft.

KARNES COUNTY—Victoria Drlg. Co.'s John Yanta 1, S. G. Hardaway sur, still sd 1575 ft.

LAVACA COUNTY—Willshire Union Oil Co.'s A. Pohl 1, M. Wooten sur, still sd 3135 ft.

LIVE OAK COUNTY—R. A. David et al's Border National Bank 1, Stephen Hays sur, coring 918 ft. R. H. Feltner's Sanger Ranch 2, CC&SF Ry. sur No. 385, clearing lcn. Margo Oil Co.'s Mrs. Bessie Chestnut 1, L. Ayera sur, abnd 1275 ft. L. W. Stieren's Lange 1, sec 13, Simmons sub, T. Adams sur, set sur csg, wocs.

NUECES COUNTY—Mills Bennett's J. O. Lamb 1, J. V. L. de Herera sur, abnd 7202 ft. Camp Prod. Co.'s C. P. Wardner, Tr. 1, sec 12, Stratton sub, coring 5125 ft. E. M. Jones' Lucy Cooke 1, Quadrilla Irr. sur No. 139, dr 5360 ft. Magnolia Pet. Co.'s Clara Driscoll Sevier 2, E. Russell sur, dr 5250 ft. Shell Pet. Co.'s State of Texas 1, 100.8-ac tr, Laguna Madre Bay, driving piling. Sloan-Harvey & Green River Oil Co.'s E. Cassens 1, sec 26, Agua Dulce Farm lots, mi. Southern Minerals Corp.'s Richard King 1, sec 32, King farm lots, dr 4240 ft. Texon Royalty Co.'s Sevier



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2-B, Chapman Lands, dr 6350 ft. United Prod. Co.'s W. H. Harvey 1, Garcia sur, making dst, sand 7382-88 ft. Wellington Oil Co.'s Sevier 14, Wm. Gamble sur, dst 5425-33 ft, 6 min, recover 60 ft mud and gasoline, 350 lbs pressure, setting 5½ inch csg.

REFUGIO COUNTY—United Prod. Co.'s J. J. O'Brien 12, Refugio Town Tracts, coring 7850 ft.

SAN PATRICIO COUNTY—Eleanor Oil Co.'s J. F. Green Est. 1, T. T. Williamson sur, coring 6640 ft. Phillips Pet. Co.'s H. Schmidt 1, sec 81, Paul sub, coring 5360 ft. Plymouth Oil Co.'s E. H. Welder 65-C, sec 50, Welder sub, fsh 6900 ft.

VICTORIA COUNTY—Commonwealth Oil & Gas Co.'s (George H. Echols) W. H. Bennett 3, J. E. Galban sur, 1 mi n of Heyser field, coring 5427 ft. Magnolia Pet. Co.'s Wagner 1, T&NO Ry. sur No. 1, dr 4185 ft. Union Oil Co. of Calif.'s C. A. Keeran 3, M. de Leon sur, dr 5420 ft.

WILLACY COUNTY—Ruez-Morton, Inc.'s F. Armendiez 1, sh 4, San Juan de Carricitos gr, dk and sk; Johnson-Stillman 1, blk 23, sh 44, San Juan de Carricitos gr, sd 650 ft, laying water line. Shell Pet. Corp. et al's Yturria 1, San Juan de Carricitos gr, sh 64 Viejo, coring below 8205 ft.

LAREDO DISTRICT

DUVAL COUNTY—Argo Oil Corp.'s Rodriguez 1, 330 ft nel, 1849 ft sel of s/4 sur 498, fsh 2375 ft, top Jackson 1911 ft. Atlantic Ref. Co.'s W. A. Lowe 1, sec 466, dr 2070 ft. A. J. Brinkoeter's P. Garza de Rodriguez 1, sur 212, 1 mi w prod in Seven Sisters field, dr 1500 ft. Clark & Cowden's J. M. Richardson 3, sec 5, ru. Diamond Half Oil Co.'s J. F. Sanclair 1, 330 ft nel, 2310 ft sel, sec 405, Elizabeth Gravis sur, bldg road. Frank Gravis' F. Vaello Puig 1, San Andres gr, dr 2513 ft. C. K. Gravis Jr.'s C. Holzapfel 1, J. Poitevent sur No. 42, dr 1760 ft. H. F. Grimm's Elizabeth Mew 1, 660 ft sl, 330 ft wl of sur 289, lcn. Penn-Palangana Oil Co. et al's C. K. Gravis 1, 330 ft se of e cor sec 250 and in sec 254, ru. Rio Bravo Dr. Co. & George Coates' W. R. Peters 2-C, sec 398, abd 2846 ft. The Texas Co.'s Duval County Ranch 2-C, 1650 ft nel and 2350 ft nl sur 194, lcn. E. R. Thomas Est. et al's Atlee Parr 1, 150 ft sl, 320 ft el of sw¼ E. H. Valentine sur 26, ru. W. H. Wollett & M. D. Masten's Bishop Cattle Co. 1, sec 74, lcn.

JIM HOGG COUNTY—J. V. Adams et al's W. F. Allen 1, sec 84, BS&F sur, abnd 1419 ft. Cole Pet. Co.'s Yeager Ranch 1, sec 452, dr water well. Gifford Oil Co. & Locke Purnell's E. L. Armstrong 1, sec 43, sd 4358 ft.

McMULLEN COUNTY—Howell Oil Co.'s J. H. Martin Hrs. 1, near Nueces r, set 60 ft 10-in csg, sd. Humble's R. B. Swiger 1, sec 46, prep to mim. Reynolds & Richardson et al's Shiner Ranch 2, 330 ft nl and el of sec 39. Shumway subd, Shiner Ranch, mim. Snider et al's B. G. Clauch 1, M. Hely sur, Gov't Wells sand 1052-58 ft, still sd.

STARR COUNTY—John R. Clopton et al's Green 1, blk 5, sh 35, por 81, sand 3818-22 ft, tested gas, sprayed gasoline, td 4620, sd, woo; Tijerina 4, blk 12, sh 14-C, por 89, sp. G. E. Dodd's Wood Est. 1, por 84, sand 1800-1820 ft, testing. Danray Oil Co.'s (McLeod et al) C. Ramos 1, sec 150, dr 950 ft. Glenn Harroun's V. C. Guerra et al's 1, tr B, Frank R. Campbell sub. ru & sd. K. E. Merran's Starr County Cattle Co. 1, blk 34, por 89, sand 2505-17 ft, oil odor, dr 3000 ft. Moss & Heard's S. B. Ricaby 3, por 83, tested sw 1600 ft sand, shows oil. F. P. Schwab & Fred Foster's Muno 1, Javali gr, lcn.

WEBB COUNTY—J. M. Anderson's Juarez 1, blk 12, sec 111, abnd at 2526 ft. Mills Bennett Prod. Co.'s M. D. Slator 2, 330 ft nel and nwl blk 89, Mission Oil Co. subd, J. V. Barrigo gr, lcn. W. C. Billings' Fee 1, 330 ft nl, 990 ft el sur 2, lcn. Bolling & Coffey's A. Villareal 1, blk 17, sec 767, pits. French Oil Corp.'s J. M. Garza Est. 2, sec 1131, top Mirando sand 2103 ft. td 2107 ft, abnd. Kepley Prod. Co.'s W. C. Billings 1, sec 6, lcn. O. W. Killam's Fee 1, sec 1690, dr 5052 ft. Laurel Bros. 1, sur 333, 3 mi ne Oilton, lcn. Lu-Tex Oil Co.'s Lone Star Con. Co. et al 1-A, por 12, sd 1650 ft. Joe Palmer et al's Laredo Nat'l Bank, sec 463, snd 1535-55 ft, ran csg & sd. Wilcox O. & G. Corp.'s B. S. Bunbar 1, Joaquin Galan gr, temp abnd 5355 ft.

ZAPATA COUNTY—Mills Bennett's F. B. Martinez 1, sh 1, blk 84, dr 1897 ft, sdy sh & snd 1220-26, show oil, 2 tests failed, snd 1296-1350, show sw & sul wtr, snd 1660-1800, still in sw sand. Fidelity O. & R. Co.'s Gopher 1, blk 9, sec 5, sh 8, Borrego gr, sand 700-715, little odor, temp sd. H. G. Lewis' S. Benavides 1, blk 39, Fansler & O'Hern partition, Villa gr, dr 490 ft. Magnolia Pet. Co.'s R. Cuellar 4, sec 245, abnd 1655 ft. Magnolia Pet. Co.'s Ramona Cuellar 5, 320 ft sel & swl of s¾ sur 245, ru. Randolph Wheeless' Mrs. S. Welsh 1, 150 ft nwl & swl blk 1, e½ Baleman sur, dr 1130 ft. The Zapata Corp.'s Justina Garcia et al 1, sh 3, Comitas gr, snd 1126-33 ft, setting 7-in csg 1124 ft.

TEXAS GULF COAST

BRAZORIA COUNTY—Pure's L. M. Slade 1, Peach Point prospect, S. F. Austin sur, Abst. 20, dr shale 5389 ft.

BRAZOS COUNTY—Crosby Drilling Co.'s Orlando 1, e of Millican, T. H. Mays sur, abn 3915 ft. Francis Stone Oil Co.'s Graham 1, s of College Station, R. Stevenson sur, dr sand 1789 ft.

CHAMBERS COUNTY—Sun's White 1-A, Seabreeze area, T&NO sur, sec 128, testing 8346 ft; same operator's White 1-B, Seabreeze area, Wm. Mays sur, dr shale and lime 9549 ft.

FT. BEND COUNTY—Research, Inc.'s J. M. Moore 1, ne of Orchard, S. Kennedy sur, mim. Earl Trone et al's E. Trone 1, Long Point area, H&TC sur No. 67, dr shale 459 ft.

HARRIS COUNTY—B. A. Farrell & J. C. Cox et al's Bender Estate 1, w of Humble field, M. W. Travis sur, abn 1182 ft. H. M. Harrell & O. L. Brace's Bullock 1, ne of Ogburn, C. Bowman sur, setting csg 827 ft. Hamil & Smith's Zappe 1, Bammel area, J. Farwell sur, perforating csg 6412 to 6428 ft. Stanolind's Oates 1, Clinton field, C. Martinez sur, dr shale 8349 ft; same operator's Warren Minerals 1, Hockley dome, H&TB sur No. 1, making drill stem test, 6685 ft. Texas Gulf Producing Co.'s Gillespie 1, Aldine prospect, S. Contreras sur, pb and testing around 7200 ft.

JEFFERSON COUNTY—David B. MacDaniel's Nona Mills 1, Gilbert Ranch prospect, J. G. Grant sur, dr shale 1591 ft. Magnolia's Phelan 1, sw of Amelia, Cheek area, S. Stivers sur, ru. Humble's Jefferson Land Co. 1, Cheek prospect, C. Hillibrand sur, setting cement retainer around 7764 ft.

MATAGORDA COUNTY — Continental's Robbins 2, Citrus Grove prospect, C. Franz sur, washing down 11⅜-in csg. Glenn H. McCarthy's J. Croker 1, Foley 1, Palacios prospect, L. Goodwin sur, testing 8585 ft. Sun's Craig 2, Hawkinsville dome, J. Williams sur, dr shale 4292 ft. United North & South Development Co., Stodard 1, sw of Buckeye, Cotton sur, dr shale 8694 ft.

POLK COUNTY—Mayo et al's C. Mayes 1, w of Segno, J. G. Loving sur, dr shale and lime 1490 ft.

TYLER COUNTY — Republic's Hurd 2, near Spurger field, N. Hurd sur, dr sand and shale 5459 ft.

WALLER COUNTY—N. Blumenthal's A. Kelly 1, ne of Hempstead, S. Hardin sur, dr clay 50 ft. Sumas Prod. Co.'s Menka 1, se of Hempstead, C. Donohoue sur, abn 5094 ft. H. E. William's Giddings 1, near Hempstead, J. Mouser sur, abn 4408 ft.

WASHINGTON COUNTY—Sun's Lauter 1, Clay Creek area, N. Clay sur, perforating 7361 ft.

WHARTON COUNTY—J. E. Hutchins' J. J. Wensley 1, near Shell's Seydler 1, J. Tumlinson sur, dr shale 2609 ft. Plummer's Logue 1, Spanish Camp prospect, S. F. Austin sur, No. 3, comp dry gas well 3015 ft. Texas Co.'s Kluck 1, Blue Basin prospect, J. Hyland sur, dr salt water sand 6530 ft; same operator's Weatherer 1, e of Louise field, Ogden sur, dr soft white sand 5946 ft.

UTAH

EMERY COUNTY—Standard Oil Co. of Calif. with the Continental Oil Co.'s Palm 1-A, nw nw 27-23s-11e, preparing to resume operations. Td 1610 ft. Completed as water well for dr purposes at 2285 ft when operators were unable to drill through creviced formations in which circulation was constantly lost.

GRAND COUNTY—Utah Southern Oil Co's Hyde-Government 1, s nw nw 32-22s-20e, dr 6558 ft.

Columbia Crude Corp.'s Rath-Government 1, ne sw 12-25s-20e, trying for water so above 2139 ft where it drilled into os and gs.

WYOMING

ALBANY COUNTY—Hal Blakeman's Chappel 1, cne nw 33-21n-76w, co 1680 ft.

CAMPBELL COUNTY—G. J. Sherin et al's Rhodes 1, ne se sw 24-49n-74w, dr 390 ft.

CONVERSE COUNTY—Chadron-Osage Oil Co's State 1, sw sw sw 16-32n-69w, dr 3022 ft. Wyoming-Southern Oil Co.'s Salisbury 2, nec nw 27-32n-69w, dr 201 ft.

NIOBRARA COUNTY—Riggs Drilling Co.'s A. A. Spaugh 2, se sw sw 32-34n-65w, dr 1326 ft. Well had 15 ft of Sundance formation at 400 ft which was dry.

PARK COUNTY—General Petroleum Corp.'s Government 1, nw nw nw 33-37n-100w, coring in lime at 5701 ft. The 9⅝-in csg is set at 5668 ft.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, elev 120 ft, coring 6120 ft.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw ne se 19-4n-24e, fsg 1410 ft lime.

POLK COUNTY—Edw. A. Hill's Polk Co. Lbr. Co. 1, nw ne 32-25s-25e, elev 90 ft, dk.

NEW PRODUCTS FOR THE FIELD
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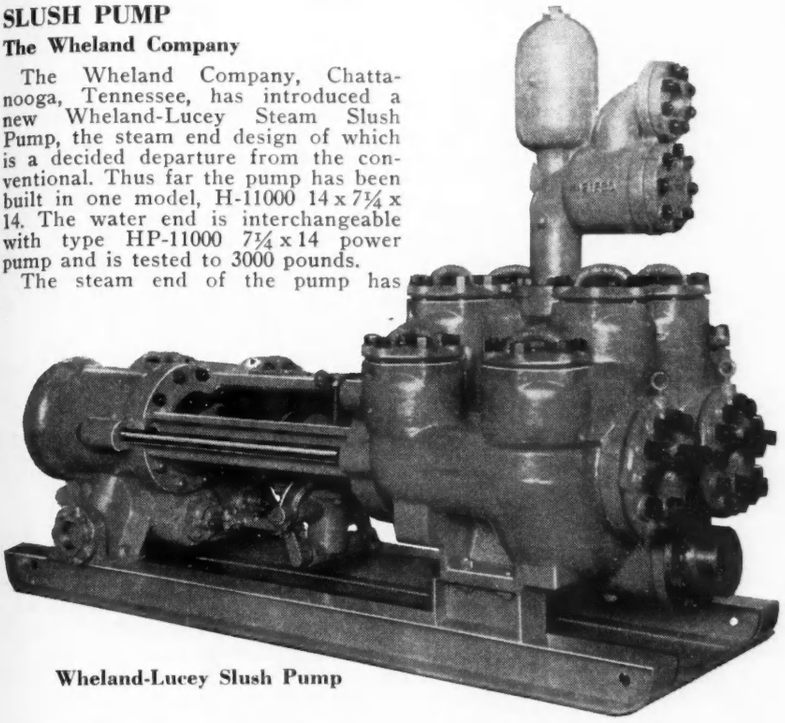
SLUSH PUMP
The Wheland Company

The Wheland Company, Chattanooga, Tennessee, has introduced a new Wheland-Lucey Steam Slush Pump, the steam end design of which is a decided departure from the conventional. Thus far the pump has been built in one model, H-11000 14 x 7¼ x 14. The water end is interchangeable with type HP-11000 7¼ x 14 power pump and is tested to 3000 pounds.

The steam end of the pump has been literally turned upside down with the valves below the cylinders, and rocker mechanism underneath the cradle. Intake steam enters above, and between the cylinders and passes down between the valves. Both steam and exhaust valves being located below the cylinders, condensation drains freely away through the exhaust. Since the cooled condensate is drained away at all times, it does not come in contact with, and tend to cool, the fresh intake steam. Advantages claimed are better steam cushion, increased mean effective pressure and higher mud pressure. Patents are pending on this steam end design.



Wheland-Lucey Slush Pump

WATER SOFTENER UNIT
Royal Manufacturing Company

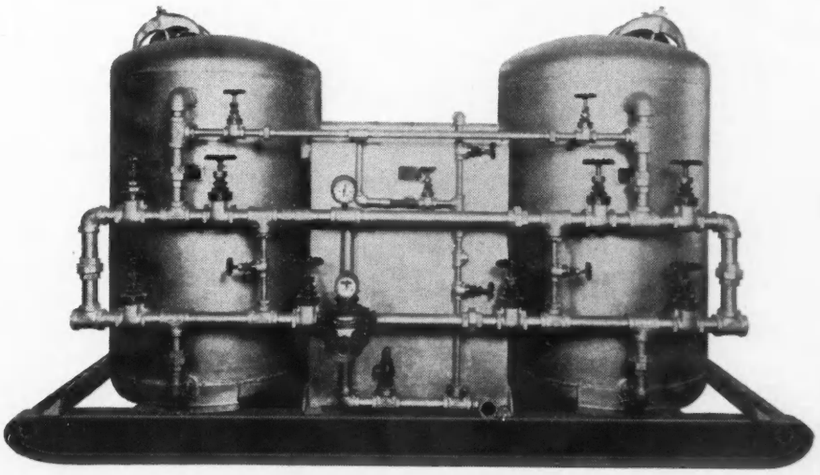
Royal Manufacturing Company, Tulsa, Oklahoma, has developed a portable water softening or treating machine which eliminates sediment and hardness from boiler feed water.

The mineral used in the process is a fine sand mined and processed so that each cubic foot of mineral is capable of base-exchanging 5500 grains of calcium and magnesium hardness which is found in practically all feed water in the oil country.

The new water softener is built in nine sizes, based on the amount of steam pressure and the water necessary to take care of the boilers in use. The machines are placed between the boiler feed pump and the heater so that the pressure of the pump forces the water through the softener.

The water softener is built with a brine tank mounted between the two mineral tanks, and all three are mounted on skids. When water passes through a bed of this mineral of sodium aluminum silicate, any salts of calcium or magnesium gradually change the mineral from sodium aluminum silicate to calcium or magnesium aluminum silicate, and the sodium passes on in the exact amount to replace the calcium and magnesium that was given up.

These machines average 8 to 12 hours run per regeneration. They are equipped with special alarm devices on the water meter and as the water has a known hardness and as the mineral has a non-absorbing quality it is simple to figure the number of gallons which can be passed through the bed of mineral before exhaustion occurs. The alarm type meter is set at this point and when the proper amount of water has registered through the meter an electric contact is made and a large gong rings. In this manner the operator knows when his machine is exhausted and the period of regeneration must occur.



Royal Water Softener Unit

DRILLING BIT
Globe Oil Tools Company

Globe Oil Tools Company, Los Nietos, California, has announced the Globe Type H Roller Bit, featuring strength and compactness, and setting a new standard for rock bit construction, the manufacturer claims. Heretofore, roller bit designers have made use of a center yoke piece, comprising the inner supports for the gauge cutters and the center support for the long inside cutters, and this inner yoke assembly has been held in place by the cutter pins from the four fingers on the circumference of the bit body. In the new Type H roller bit this "floating" yoke has been done away with by making the inner supports on the gauge cutters integral with the body, and by fastening the center support for the inside cutters directly into the bit body by a threaded member. Thus, instead of all of the load on the cutters being carried by the four outside fingers only, as in conventional designs, each of the inside, as well as the outside members contribute their share to the support of the cutter load, giving a much stronger and more rigid assembly.

Another feature of the new bit is the method of mounting the cutters on double ball races in such a way that each cutter will carry heavy thrust loads from either direction instead of just one direction. This adds to the life of the bit by keeping the cutters

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in proper alignment under the most severe usage, it is claimed. The cutters are generously hard faced and are shaped to cut a high center in the bottom of the hole, thus guiding the bit and keeping the hole straight.

Information on this rigid new bit can be secured from the company.

HOIST

Coffing Hoist Company

Coffing Hoist Company, Danville, Illinois, has announced an advanced design in ratchet gravity lowering hoists. It is convertible into two, four, and six-ton capacities by using single, double and triple chain. The construction is of malleable iron frames, with

Coffing Hoist

the sprocket and ratchet shaft made of a solid piece of carbon tool steel, heated, treated and ground. A special heat-treated chain developed for the company to meet the strain of overloading is used. Other features are gravity lowering, special alloy steel drop forged hooks and a safety valve handle.

PIPE LAYING MACHINES

Caterpillar Tractor Company

Caterpillar Tractor Company, Peoria, Illinois, has announced that its "Caterpillar" RD6 and R5 tractors are now available equipped with Trackson pipe layers. Three additional models will also be available with these pipe layers in the near future, thus providing a complete line of units.

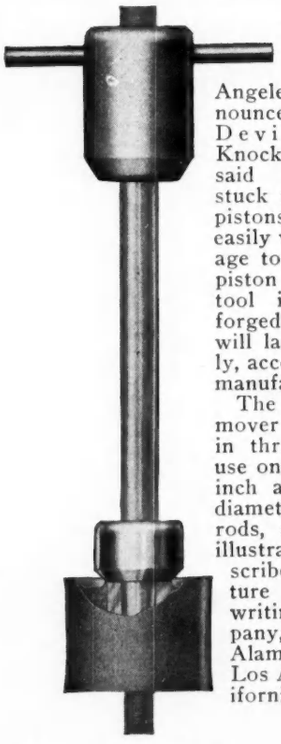
The machines are unusually rugged, it is claimed, yet fast and responsive to every pipe handling need. They lift, lower, carry and bend pipe, and serve as efficient side cranes for other heavy duty lifting service. To obtain maximum lifting capacity with minimum counter-weight, the operating mechanism is located on the side opposite the boom. Operation is simple, with all control levers within easy reach of the driver. Simplified construction permits easy access to all parts of the tractor and gives the operator an unobstructed view of the work.

The entire structure can be removed when the tractor is to be used extensively for other work. In operation the load and boom lines are raised and lowered under power by means of worm-driven winches, thus insuring safety and complete control of the load. A selection of three speeds in either direction for both boom and load line drums is provided by the special Trackson transmission and cross drive mechanism. A single lever controls the direction of rotation of the drums, so that either can be raised or lowered separately or together, as desired.

Power for driving the pipe layer is from the "Caterpillar" rear power take-off through a ball-bearing-mounted friction clutch. Operation is therefore independent of the tractor clutch and saves wear on that part.

PISTON REMOVER

Oil Well Manufacturing Corporation



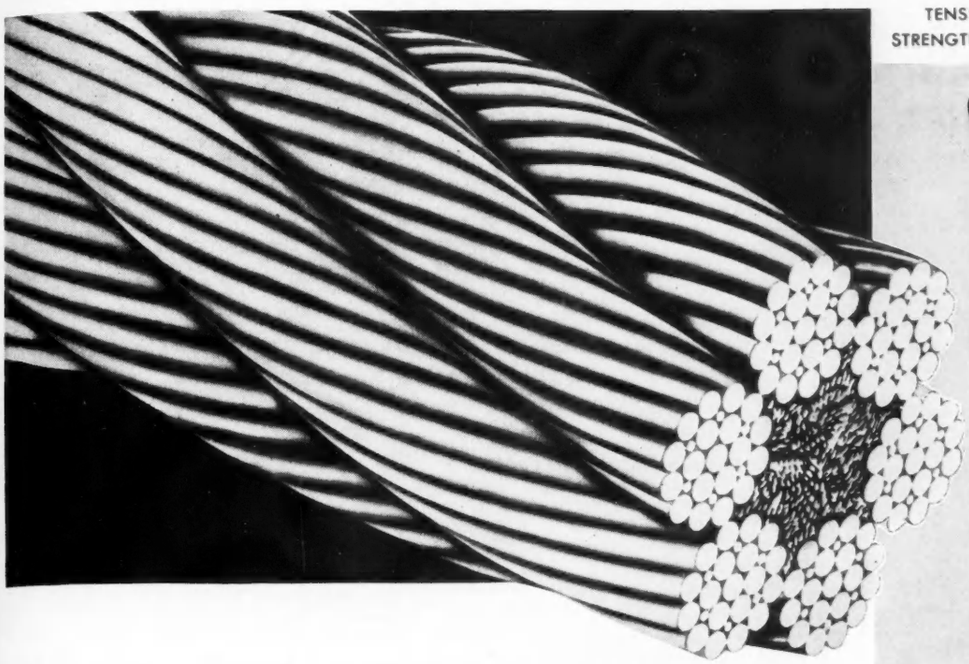
Red Devil Piston Knocker

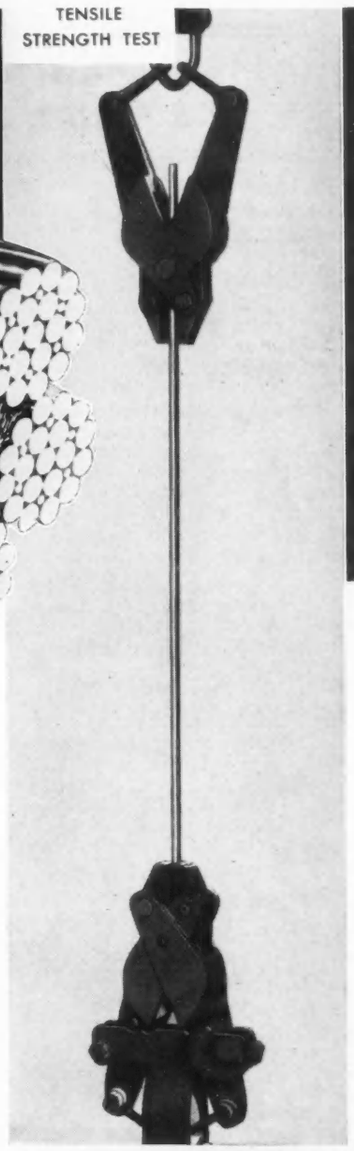
Oil Well Manufacturing Corporation, Los Angeles, has announced the Red Devil Piston Knocker, which is said to remove stuck tapered type pistons quickly and easily without damage to pistons and piston rods. The tool is made of forged steel and will last indefinitely, according to the manufacturer.

The piston remover is available in three sizes for use on 2½-inch, 2¼ inch and two-inch diameter piston rods, and is fully illustrated and described in literature available by writing the company, 6000 South Alameda Street, Los Angeles, California.

Geophysical Prospecting

The Bureau of Mines, Washington, D. C., recently issued a 130-page manual on "Geophysical Prospecting with the Magnetometer," which was printed by the American Askania Corporation under a cooperative agreement with the Bureau. The manual is one of the most thorough treatises yet issued on the use of the magnetometer. It is for sale by the American Askania Corporation, Houston, Texas, and the price is $1.50 per copy.





WE TESTED THIS 450 TIMES

To prove its Quality

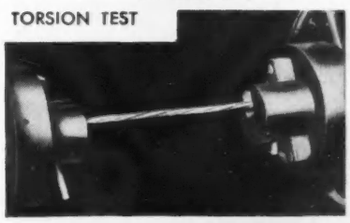
JUST as each part of a well built machine* must be tested individually before it is accepted, so each individual wire in American Tiger Brand Wire Lines is tested at least 3 times, in addition to test for size, before it can pass to the stranding machines.

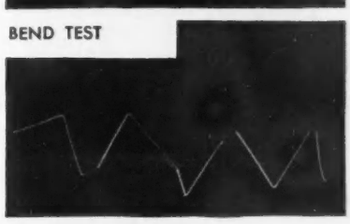
Your work puts wire lines to the severest tests. They must string or reeve easily and quickly . . . spool well . . . avoid whipping at high speeds . . . take the terrific jerks of starting and stopping.

And it is these qualities in American Tiger Brand Wire Lines which have given them their dominant position in the field — qualities which have been built into them by engineers whose wealth of experience is backed by over 100 years of wire making.

American Tiger Brand Wire Lines are available in either Standard (non-preformed) or Excellay (preformed) constructions.

***USS American Tiger Brand Wire Lines are machines, more depended on than many. They fit the definition "Any combination of mechanism for utilizing or applying power."**





ELECTRICAL WIRES AND CABLES

We manufacture a complete line of Electrical Cables for the Oil Fields, some of which are —

Amerclad All-Rubber Cords and Cables—Including Oil Proof and Oil Resisting Types · Rubber Covered Wire · Reliance URC Weatherproof Wire · Motor Leads · Switchboard Wires · Geophone · Seismograph and Electrical Prospecting Cables.

AMERICAN TIGER BRAND WIRE LINES

AMERICAN STEEL & WIRE COMPANY

208 South La Salle Street, Chicago · Empire State Building, New York

COLUMBIA STEEL COMPANY

Russ Building, San Francisco

United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

This Week with the Industry's EQUIPMENT SUPPLIERS

United Supply Opens Three New Stores

United Supply and Manufacturing Company of Tulsa announces through Brooks Gutelius, president, the opening of a new store at Chase, Kansas, and at Houston and Odessa in Texas. E. R. Will is store manager at Chase, C. M. Holland at Houston and J. O. Mayfield at Odessa.

United Supply now maintains seven branch stores in Kansas, Oklahoma, Texas and New Mexico. The company was organized in April of 1936 and just recently larger accomodations in the Kennedy building in Tulsa were necessary to house the general offices of the company.

Schwarzkopf New Head of American Cutting Alloys

Dr. Ing. Paul Schwarzkopf of Reutte, Austria, metallurgist, has accepted presidency of American Cutting Alloys, Incorporated, New York. Dr. Schwarzkopf invented the titanium cemented carbides for cutting of steel at high speeds.

Alvin Zwerneman Made Axelson Vice President

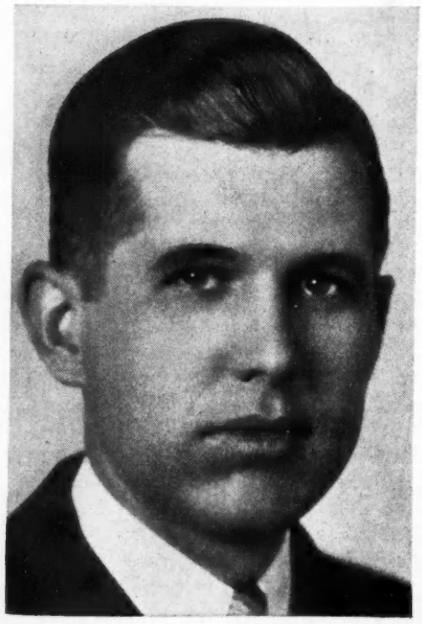
Appointment of Alvin Zwerneman as vice president of Axelson Manufacturing Company has been announced by J. C. Axelson, president. Zwerneman's appointment became effective March 1. His connection with the company has extended over a period of nearly 12 years. He is well known in both the Mid-Continent and California fields. His activities will continue to center around the direction of selling and field service.

ALVIN ZWERNEMAN
New Axelson Vice President

John F. Eaton Now With American Steel Derrick

John F. Eaton, formerly with Jarecki Manufacturing Company as engineer engaged in sales and development work, has resigned to accept a position as mechanical engineer for The American Steel Derrick Company. Eaton's headquarters will continue to be in Tulsa.

Eaton owns patents on several new oil field specialties and on improvements in existing equipment. With C. A. Mathey, owner of C. A. Mathey Machine Works, he organized The Engineering Company, Inc., of Tulsa, which has been successful in the manufacture and sale of certain oil field specialties.



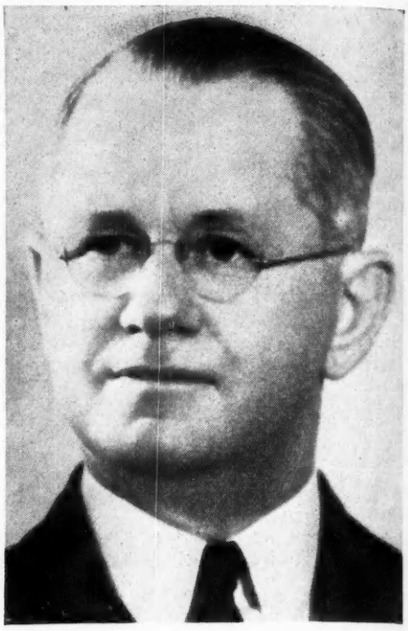
JOHN F. EATON
Now with American Steel Derrick Company at Tulsa.

Eaton is a member of The American Society of Mechanical Engineers, The American Petroleum Institute, and was one of the founders of The Engineers Club of Tulsa of which he is a member. He is a graduate in mechanical engineering of Princeton University.

Kelley Vice President Of Shaffer Specialty

Ben F. Kelley, formerly with Titusville Iron Works, has become financially interested in Shaffer Specialty Company, Tulsa, and assumed duties of vice president and sales manager.

Kelley began his career in the oil business near his home town of Hartford City, Indiana, in 1902, came to Tulsa in 1909 to join the production department of Gypsy Oil Company for two years. In 1911 he became machinery representative of Continental Supply Company. He joined Titusville Iron Works in 1920 as western sales representative.



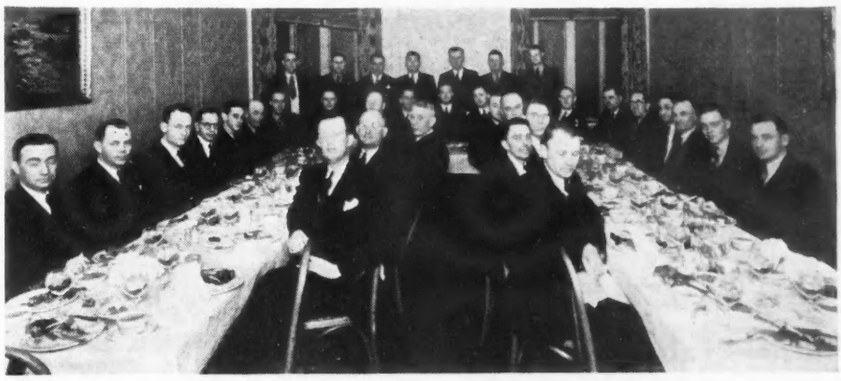
BEN F. KELLEY
Becomes vice president and Sales Manager of Shaffer Specialty Company.

Johnston Formation Testers Handled by New Corporation

Johnston Oil Field Service Corporation, a Texas corporation, has been formed by J. L. Johnston to handle the Johnston formation testing tools in the Mid-Continent and Gulf Coast, follow-

J. L. JOHNSTON
His new company services the family formation tester.

ing the recent validation of the patents of the Johnston Formation Testing Corporation and E. C. Johnston. Headquarters have been established at 131 Harvard Street, Houston, where a modern manufacturing and service plant was erected. This organization is licensed by E. C. Johnston, holder of the original patent on the Johnston tool, and by Johnston Brothers Valve Company, composed of Blaine, E. C. and J. L. Johnston. M. O. Johnston Oil Field Service Corporation, in California, is licensed by the above parties to operate on the West Coast. Johnston Oil Field Service Corporation is equipped with a staff of 26 operators and service men.



The annual sales meeting of Houston Oil Field Material Company held recently was ended with a banquet at the Houston Club, attended by 34 members of the sales and executive staff.

Houston Oil Show Programs Now Under Way

In order to provide a thorough coverage of every branch of the petroleum industry at the Oil-World Exposition, which will be held in Houston, from October 11 to 16, inclusive, a definite and complete program was outlined at a recent meeting of the board of directors. A program committee was appointed and consists of R. L. Dudley, chairman; E. G. Lenzner, assistant chairman; and the committee consisting of George A. Hill, Jr., president Houston Oil Company; Chase Sutton, division manager Pure Oil Company and Frank Carothers, district manager Norvell-Wilder Supply Company. Subcommittees to take charge of specific activities were also named as follows:

Refinery Committee: W. H. Curtin, chairman; O. E. Berg, M. N. Dannenbaum, R. L. Mallory, W. J. Peddie, and George Reid. A sub-division of the refinery committee will be a technical instrument school sponsored by The Rice Institute, University of Texas and Texas A. & M. College. This technical school will be similar to the meter school of the University of Oklahoma and representatives of manufacturers of meters and instruments will assist in presenting equipment and giving practical demonstrations. The refinery committee itself will be aided by engineers of the oil companies, refineries and gasoline plants.

Directional Drilling Committee: G. B. Corless, chairman; Alexander Anderson, H. John Eastman, R. S. Hyer, A. B. Patterson, M. L. Cashion, and D. B. Collins. This committee will present a program of new developments in directional drilling and surveying which will extend throughout the week of the oil show.

Drilling Committee: Joe Russell, chairman. The extensive work of this committee is being outlined with individual members being selected to handle specific phases of drilling technique. Programs covering all kinds of drilling operations will be presented throughout the week.

Production Committee: B. M. Nowery, chairman. Production methods under various conditions will be treated by members of this committee which will provide speakers on particular subjects during the technical sessions to be held during the show.

Associations and Conventions Committee: Chase Sutton, chairman; Wm. V. Vietti, Carl Hickman, Phil F. Martyn, W. B. Preston, A. T. McDannald, C. E. Buchner, James Anderson, and George A. Hill, Jr. The meetings of the various societies will be of outstanding interest during the exposition and under the management of the committee named are expected to provide valuable data for the entire oil industry.

Safety and First Aid Committee: J. J. Delahide, chairman; Geo. J. Gruber, R. B. Roaper, Claude Liles, Pete Keegan, Tom Brown, Jerry Lockwood, Cecil Hightower, and C. A. Miller. In addition to all matters pertaining to safety in field and plant, this committee will have charge of the first aid contests which will be a feature of the show.

New Patents and Inventions Committee: Lester B. Clark, chairman. Exhibiting space will be furnished inventors to show new patents and one evening will be assigned for talks and demonstrations of new inventions.

Attendance Committee: George A. Hill, Jr., and W. L. Childs, chairmen; T. J. Donoghue, A. M. McCorkle, A. T. McDannald, C. B. Moore, B. M. Nowery, George O'Leary, C. R. Patterson, M. W. Phelps, Joe Russell, T. E. Swigart, and F. H. Thrailkill. A sub-committee to take charge of foreign attendance will later be selected.

Entertainment Committee: Frank Carothers, chairman; Robert J. Miller, George O'Leary, and S. T. Childress. In addition to the entertainment programs being prepared by this committee, the Wildcat Committee will give a banquet with special features in addition to the show put on by its own members.

Oil Equipment Export Committee: Under the chairmanship of Thomas E. Ward, and the following committee, an extensive program is planned to consist of several meetings during the exposition which will be of value to the foreign visitors and to the manufacturing companies serving foreign fields: P. A. Bogdanoff, J. W. Casterton, J. A. de Lanoy, P. W. Fenton, W. G. Foster, W. J. Malloy, H. B. Malone, E. B. Middlekauf, J. S. Parks, F. J. Petura, H. Slater, J. R. Taylor, O. P. Wegner, J. A. Whitely, George W. Young, Clyde Ellwood, Jack Mellon, W. F. Huff, Robert J. Eiche and Bert R. Emerick.

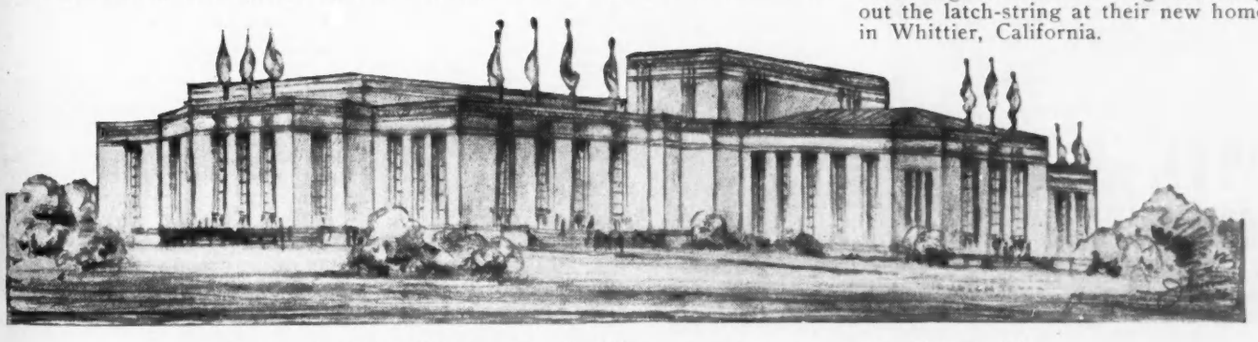
E. G. Lenzner, general manager of the Oil-World Exposition, Inc., will serve as assistant chairman on all committees in order to coordinate the work of the various projects and assist in the completion of all plans.

Daughter to Mr. and Mrs. Ray Humphreys

February 26, 1937, was just another day on the calendar to most people. But to Ray Humphreys, assistant to the president of Axelson Manufacturing Company, Los Angeles, it was a date of considerable moment.

On that day, at Mission Hospital, Huntington Park, came Sally Ann Humphreys, 10 pounds and 13 ounces of coquetry. Mrs. Humphreys is doing very well, thank you, as is Sally Ann. (Humphreys is slowly recovering.)

Incidentally, the Humphreys' will soon stage a housewarming and hang out the latch-string at their new home in Whittier, California.



Houston's $1,337,000 exposition building now under construction. It is in this structure that the Oil-World Exposition will be held October 11 to 16.

Miller Sand Pumps
are inexpensive

Sediment in the Bottom of Your Well
is expensive

Sand and mud in your well is holding back the flow of oil and keeping down production. Clean out this sediment quickly and at small cost with a MILLER —*the Sand Pump with the powerful suction action that is in world-wide use.*

The MILLER is made in diameters of 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inches and lengths of 20, 25 and 30 feet. 5/32 inch wall thickness seamless tubes used in REGULAR Type Sand Pump. One quarter inch wall tubes used in HEAVY Type Sand Pumps.

SAND BOTTOM

Used when tools are run and when well is shot to quickly remove loose material.

BAILER BOTTOM

With the Bailer Bottom installed the Miller is changed to a Bailer giving you a combination of either a Bailer or Sand Pump in one tool.

MILLER SAND PUMPS ARE SOLD BY SUPPLY COMPANIES EVERYWHERE

Write for Descriptive Folder and Price List

CHISEL BOTTOM
(In Pump)

Will often save the expense of running tools as its chisel shape breaks up tightly packed sands.

MILLER
SAND PUMP CO.

General Offices and Shop, Box 4516
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Squeaks from the Bull Wheel

Not Waiting

New Hubby: If I were to die would you marry again?

Movie Blonde: You funny man! What makes you think I'll wait that long?

And the Fight Was On

Mother-in-law: "That's a cute little tree on the lawn, John. It's only a foot high."

Son-in-law: "Yes, I just planted it. I hope the next time you come you'll be able to sit in its shade."

Forewarned

The young son of a professor spent the week-end on a dairy farm where he acquired considerable knowledge. Upon his return home he immediately looked up one of his friends and related his experiences. "If you ever go to a farm, Jimmie," he cautioned, "and you see a big cow off to herself, in a stall with bars, and she has a ring in her nose and don't have any faucets, she's a bull and you'd better keep clear away from her."

Got It

Mistress—Mary, did I hear you kiss someone in the kitchen?

Cook—Well, ma'am, the junk man said he came for a little oven.

Ways to Say it

So Elsie told you I was witty, did she?

Well, she didn't express it exactly that way. She said she had to laugh every time you opened your mouth.

A Break for Dad

Son: "Tomorrow is Dad's birthday. What shall we do for him?"

Daughter: "We might let him have his car for a day."

Not Particular

Doctor (feeling Sandy's pulse in bed): "What do you drink."

Sandy (with brightening face): "Oh, I'm nae particular, doctor! Anything you've got with ye."

Ow! Ow!

Little Willie, what a bother,
With a golf club hit his father,
Little Willie called to Mar,
"Look, I've made a hole in Par."

Law of Capture

Manager (pointing to floor): "Smith is that your cigarette stub?"

Clerk (pleasantly): "Not at all, sir; you saw it first."

To Be Expected

"What seems to be the matter, Jack?"

"A puncture."

"Why didn't you look out? That man at the filling station told us there was a fork in the road about here."

She Knew Her Man

"But, my dear madam, it's no use consulting me about your husband. I'm a horse doctor."

"That's why I came to you. He's a chronic kicker."

Confusion Explained

An eminent architect was being cross-examined in court.

"You are a builder?" asked the state's attorney.

"No, I am an architect."

"Well, is there a difference?"

"Yes, an architect conceives the design, prepares the plan—in short, supplies the mind. The builder is but the machine which puts it together."

"A very ingenious distinction without a difference," rejoined the attorney sarcastically. "Could you tell this court who was the architect of the Tower of Babel?"

"There was none," replied the architect very calmly, "hence the confusion."

All Set

Mistress—If the master brings some more of his friends to dinner tonight, Mary, are you sure you're ready?

Cook—Quite sure, ma'am. My trunk's packed.

True

A fellow asked his boss for a raise. He told the boss that he must have one, as several other companies were after him.

Later, the boss discovered they were the gas company, the water company, and a furnishing company.

Not a PWA Job

The foreman of a section gang had more than his share of Irish wit.

One day he was walking along his section of the line when he found one of his men fast asleep in the shade of a hedge. Eyeing the man with a smile, he said, "Slape on, ye idle spalpeen, slape on. So long as ye slape ye've got a job, but when ye wake up ye're out of work."

A Kentucky Breakfast

"Bring me a Kentucky breakfast," ordered the colonel.

"And what is that sir," inquired the waiter.

"It is a bull dog, a sirloin steak and a quart of bourbon whisky," the colonel replied.

"But sir, what are you going to do with the bull dog?" the waiter inquired.

"Feed him the steak, you damphool," the irritated colonel answered.

Reassuring

"Here's a letter from your wife, saying you are the father of a ten-pound boy."

"That's all, except at the end of the letter she say, 'truly yours'."

For Tat

"So you're an actor, eh?" muttered the stout man. "Well, I'm a banker. And would you believe it, I haven't been near a theatre in five years."

"That's nothing at all," responded the actor breezily, "I haven't been near a bank in ten years!"